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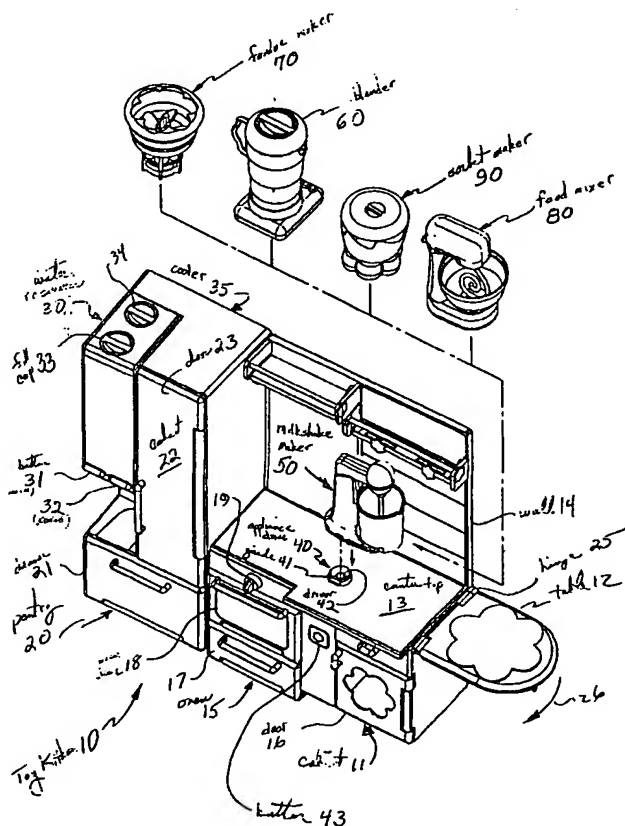
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(54) Title: **TOY KITCHEN**



(57) Abstract: A toy kitchen (10) includes a countertop (13) and supporting cabinet (11). Within the cabinet, a battery powered drive mechanism (40) is operatively coupled to an appliance driver (42) supported on the countertop. A refrigeration unit and water reservoir (30) are included with the toy kitchen to provide cooled water from a reservoir in proximity to the cooler (35). A plurality of interchangeable food processing appliances (50, 60, 70, 80, 90,) are provided which interchangeably engage the appliance drive mechanism as they are placed upon the countertop. Each appliance includes a mixing element driven by the internal appliance drive (40) of the toy kitchen and utilizes a mixing action to provide food processing.



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TOY KITCHEN

SPECIFICATION

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Field of the Invention

This invention relates generally to toy apparatus used in children's play activities which replicate food preparation and kitchen activities.

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Background of the Invention

Toys which provide reduced scale or miniature type play environments simulating adult environments to some degree are well known in the art and have been provided in a variety of forms. The sophistication of such toys varies from highly detailed and authentic apparatus suitable for collectors and the like to everyday toys intended for play use by children often in combination with dolls or additional miniature apparatus.

For miniature playsets intended for general play use by children, the general concept is to provide a reduced size or scale equipment set or play environment which generally mimics a full size house, room, room portion or equipment and appliances used in normal life. In some instances, such playsets are sized to fit one or more cooperating dolls. In many playsets however, the reduced scale is not specifically intended to correspond to a given doll size but rather is intended to be handled by the child user in a convenient play manner. For the most part, such toy playsets and miniature toys attempt to allow the child user to mimic actual events observed in everyday life.

One of the most popular types of toy playsets utilizing miniaturized or scaled versions of everyday environment is found in so-called kitchen toys. Such toys comprise a broad range of toy products which are able to facilitate imitation of activities such as cooking, cleaning or other everyday activities.

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While practitioners in the art have provided a substantial variety of such toys including toys intended for kitchen type play, there remains nonetheless a continuing need in the art for evermore improved, amusing, interesting and enjoyable toy kitchen playsets.

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Summary of the Invention

Accordingly, it is a general object of the present invention to provide an improved miniaturized toy playset. It is a more particular object of the present invention to provide an improved miniaturized toy playset which allows the child user to actually participate in food preparation activities within a toy kitchen.

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In accordance with the present invention there is provided a toy kitchen comprising: a toy kitchen cabinet having a countertop surface; an appliance drive supported by the countertop and having an appliance driver; a drive mechanism within the toy kitchen cabinet coupled to the appliance driver providing powered rotational power to the appliance driver; and a plurality of toy appliances each having a rotational element and a coupler and each being constructed to be placed upon the countertop such that their respective couplers cooperatively engage the appliance driver.

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Brief Description of the Drawings

The features of the present invention, which are believed to be novel, are set forth with particularity in the appended claims. The invention, together with

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further objects and advantages thereof, may best be understood by reference to the following description taken in conjunction with the accompanying drawings, in the several figures of which like reference numerals identify like elements and in which:

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Figure 1 sets forth a perspective view of a toy kitchen having interchangeable powered appliances constructed in accordance with the present invention;

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Figure 2 sets forth a front view of a portion of the toy kitchen of Figure 1;

Figure 3 sets forth a partial section view of the toy kitchen of Figure 2 taken along section lines 3-3 therein;

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Figure 4 sets forth a section view of the toy kitchen shown in Figure 2 taken along section lines 4-4 therein;

Figure 5 sets forth a front view of an additional portion of the present invention toy kitchen;

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Figure 6 sets forth a section view of the toy kitchen portion of Figure 5 taken along section lines 6-6 therein;

Figure 7 sets forth a top view of the water reservoir portion of the present invention toy kitchen;

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Figure 8 sets forth a section view of the water reservoir portion of Figure 7 taken along section lines 8-8 therein;

Figure 9 sets forth a section view of the water reservoir portion of the present invention toy kitchen taken along section lines 9-9 in Figure 7;

5 Figure 10 sets forth a section view of the water reservoir portion of the present invention toy kitchen taken along section lines 10-10 in Figure 7;

Figure 11 sets forth a perspective assembly view of the present invention toy kitchen together with a cooperating milkshake maker appliance;

10 Figure 12 sets forth a side elevation view of the milkshake maker appliance of Figure 11;

Figure 13 sets forth a section view of the milkshake maker appliance shown in Figure 11 taken along section lines 13-13 therein;

15 Figure 14 sets forth a section view of the milkshake maker appliance shown in Figure 12 taken along section lines 14-14 therein;

Figure 15 sets forth a section view of the milkshake maker of Figure 12 taken along section lines 15-15 therein;

20 Figure 16 sets forth a perspective assembly view of the present invention toy kitchen and a cooperating blender appliance;

25 Figure 17 sets forth a side elevation view of the blender appliance shown in Figure 16;

Figure 18 sets forth a front view of the blender appliance shown in Figure 16;

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Figure 19 sets forth a section view of the blender appliance of Figure 17 taken along section lines 19-19 therein;

5 Figure 20 sets forth a section view of the blender appliance shown in Figure 18 taken along section lines 20-20 therein;

Figure 21 sets forth a perspective assembly view of a toy kitchen constructed in accordance with the present invention together with a cooperating fondue appliance;

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Figure 22 sets forth a top view of the fondue appliance shown in Figure 21;

15 Figure 23 sets forth a section view of the fondue appliance of Figure 22 taken along section lines 23-23 therein;

Figure 24 sets forth a section view of the fondue appliance of Figure 23 taken along section lines 24-24 therein;

20 Figure 25 sets forth a perspective assembly view of the present invention toy kitchen and a cooperating food mixer appliance;

Figure 26 sets forth a top view of the food mixer appliance shown in Figure 25;

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Figure 27 sets forth a section view of the food mixer appliance of Figure 26 taken along section lines 27-27 therein;

30 Figure 28 sets forth a section view of the food mixer appliance of Figure 27 taken along section lines 28-28 therein;

Figure 29 sets forth a perspective assembly view of the present invention toy kitchen together with a cooperating sorbet maker appliance;

5 Figure 30 sets forth a perspective view of a sorbet maker appliance shown in Figure 29;

Figure 31 sets forth a section view of the sorbet maker appliance shown in Figure 30 taken along section lines 31-31 therein;

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Figure 32 sets forth a top view of the sorbet maker appliance shown in Figure 30;

15 Figure 33 sets forth a perspective assembly view of an alternate embodiment of the present invention fondue maker appliance.

Description of the Preferred Embodiments

20 Figure 1 sets forth a perspective view of a toy kitchen constructed in accordance with the present invention and generally referenced by numeral 10. Toy kitchen 10 is shown in combination with a plurality of food preparation accessories including a milkshake maker generally referenced by numeral 50, a blender generally referenced by numeral 60, a fondue maker generally referenced
25 by numeral 70, a food mixer generally referenced by numeral 80 and a sorbet maker generally referenced by numeral 90. By way of overview, each of appliances 50, 60, 70, 80 and 90 are described below in greater detail. However, suffice it to note here that each is interchangeably useable with toy kitchen 10 in the manner indicated by dash-line arrows in Figure 1. By way of further

overview, each of appliances 50, 60, 70, 80 and 90 is fully operational and is powered by the built-in drive apparatus within toy kitchen 10 (seen in Figure 3).

More specifically, toy kitchen 10 is preferably fabricated of a molded plastic material and suitably sized for easy handling by a child user. Toy kitchen 10 includes a toy kitchen cabinet 11 supporting a countertop 13 and a table 12. Table 12 is secured to countertop 13 by a hinge 25 allowing table 12 to pivot from its horizontal position downwardly in the manner indicated by arrow 26. Toy kitchen cabinet 11 further includes a vertical backwall 14 which extends upwardly from countertop 13. Cabinet 11 further includes a simulated oven 15 having a pair of oven doors 17 and 18. A cabinet door 16 is also supported by cabinet 11.

Toy kitchen 10 further includes a pantry 20 having a drawer 21 supported therein. Pantry 20 further includes a cabinet 22 having a door 23 supported thereon. Pantry 20 further includes a water reservoir 30 having a pair of water valve buttons 31 and 32 operable thereon. Reservoir 30 further includes a pair of water fill caps 33 and 34. As is better seen in Figure 6, pantry 20 also supports a cooling element 35 which provides cooling for water within reservoir 30 as described below.

By means described below in greater detail, a selected appliance such as milkshake maker 50 is assembled to countertop 13 by cooperation of guide 41 and appliance drive 40. With the milkshake maker appliance resting upon countertop 13 and engaging appliance drive 40 in the manner set forth below in greater detail, the user is then able to activate milkshake maker 50 by pressing button 43 upon cabinet 11 causing the drive mechanism to be energized and thereby causing the drive mechanism to operate the coupled appliance (in this case milkshake maker 50). In accordance with the preferred play pattern of the present invention toy kitchen, each of appliances 50, 60, 70, 80 and 90 may be

interchangeably utilized in cooperation with appliance drive 40 and guide 41. Each appliance is activated when positioned upon countertop 13 as shown for milkshake maker 50 by actuating button 43 to energize the internal drive mechanism (seen in Figure 3). In this manner, the child user is able to employ the various cooperating appliances provided with toy kitchen 10 and thereby create actual food materials utilizing water based food mixtures.

In accordance with the apparatus set forth below in Figures 6 through 10, toy kitchen 10 is able to provide either room temperature water or cooled water for use in the anticipated water based food preparation mixtures. By means also described below, actuation of water button 31 dispenses room temperature water from reservoir 30 while activation of button 32 dispenses substantially cooled water from reservoir 30. In this manner, food mixtures which require either room temperature or cooled water for performance with appliances 50, 60, 70, 80 and 90 may be readily available to the child user.

In addition, toy kitchen 10 includes a simulated oven 15 which is activated by a timer button 19 to provide illumination of oven 15 visible through door 18 for a timed interval. In the preferred fabrication of the present invention, button 19 is rotatable and actuates a simple timer mechanism for providing a more realistic simulation of a conventional oven and timer control.

Figure 2 sets forth a front view of cabinet 11 of toy kitchen 10. As described above, cabinet 11 includes an oven 15 having oven doors 17 and 18 together with a timer button 19. As is also described above, cabinet 11 supports a countertop 13 which, in accordance with an important aspect of the present invention, further supports an appliance drive mechanism 40 having a surrounding guide 41. A hinge 25 pivotally supports a moveable table 12. A brace 27 is pivotally secured to the sidewall of cabinet 11 and is extended as shown in Figure 2 to provide support for table 12 in the horizontal position.

Cabinet 11 further supports a button 43 which, by means set forth below in greater detail, actuates drive mechanism 40. A vertical generally planar backwall 14 extends upwardly from cabinet 11 beyond countertop 13.

5 Figure 3 sets forth a partial section view of cabinet 11 taken along section lines 3-3 in Figure 2. As described above, cabinet 11 supports a simulated oven 15 having doors 17 and 18. As is also described above, cabinet 11 supports a vertical backwall 14 and a horizontal countertop 13. A simulated timer button 19 is also supported upon cabinet 11. A pushbutton 43 is operatively coupled to a
10 switch 44 which is further coupled to connecting wires 45.

 In accordance with an important aspect of the present invention, countertop 13 supports an appliance drive mechanism 40 having an appliance
 guide 41 and an appliance driver 42. As described above, guide 41 and appliance
15 driver 42 remain secured within countertop 13.

 In further accordance with an important aspect of the present invention, a plurality of interchangeable food preparation appliances such as food mixer 80 may be placed upon countertop 13 and operatively coupled to appliance drive
20 mechanism 40. Thus, for purposes of illustration, food mixer 80 is shown operatively supported upon countertop 13 and coupled to appliance drive mechanism 40. The structure of food mixer 80 is set forth below in greater detail, and described in conjunction with Figures 25 through 28. Suffice it to note here that food mixer 80 is representative of appliances 50, 60, 70 and 90 which, as is
25 seen in Figure 1, may be interchangeably utilized in place of food mixer 80 upon countertop 13. Also, suffice it to note here that food mixer 80 includes a base 81 supporting a bowl 85. A stanchion 82 extends upwardly from base 81 and supports a head 83. As is better seen in Figures 25 through 28, head 83 extends from stanchion 82 above bowl 85 and supports a rotating mixer blade 84, most of
30 which is extending into bowl 85.

In accordance with an important aspect of the present invention, cabinet 11 supports an internal housing 100 which in turn supports an electric motor 101. Motor 101 includes an output shaft 102 supporting a worm gear 103. A shaft 105
5 rotatably supported within housing 100 includes a gear 104 which engages worm gear 103. Shaft 105 further supports a gear 106. A gear 107 is rotatably supported within housing 100 and is operatively coupled to a clutch mechanism 108. Gear 107 engages 106 and is rotated thereby. Clutch mechanism 108 is further coupled to a shaft 109 which in turn is operatively coupled to appliance
10 driver 42. An additional spring 110 is operatively coupled to appliance driver 42 and is utilized in absorbing forces imparted during appliance coupling. Appliance driver 42 defines an internal socket 111.

In operation, actuation of switch 44 by pressing button 43 couples
15 operative power (not shown) to energize motor 101 rotating output shaft 102 and work gear 103. The rotation of worm gear 103 causes a corresponding rotation of gears 104 and 106 together with shaft 105. The engagement of gears 106 and 107 imparts the rotation of gear 106 to gear 107 and clutch mechanism 108. Clutch mechanism 108 couples the rotational power imparted to gear 107 to shaft 109
20 causing appliance driver 42 to be rotated. In this manner, the operative power within the appliance drive mechanism is provided each time, and so long as, button 43 is pressed activating switch 44.

In further accordance with the present invention, food mixer 80 includes a
25 coupler 85 rotatably supported by base 81 and configured to be received within and engage 111 of appliance driver 42. Coupler 85 is rotatably supported by a shaft 87 which further supports a gear 86. As a result, the rotational power applied to appliance drive 42 in the manner described above produces a corresponding rotational power applied to coupler 85, shaft 87 and gear 86. By
30 means set forth below in Figures 25 through 28 in greater detail, this rotational

power is coupled to the remainder of food mixer 80 to ultimately produce rotation of mixer blade 84 and allow the preparation of a water based food powder within bowl 85.

5 It will be apparent to those skilled in the art that food mixer 80 in Figure 3 is representative of the various interchangeable food making appliances set forth above and, in each instance, the proper positioning of the food making appliance and the cooperation of appliance drive mechanism 40 facilitates the operation of the appliance. It will be equally apparent that in an important aspect of the
10 present invention, in each such instance the operative power utilized in food preparation is initially provided by the appliance drive mechanism utilizing motor 101 and its gear coupling apparatus.

 Figure 4 sets forth a section view of cabinet 11 taken along section lines
15 4-4 in Figure 2. Toy kitchen 10 includes a cabinet 11 having a simulated oven 15. Oven 15 includes oven doors 17 and 18 together with a timer button 19. Cabinet 11 further supports a countertop 13 and a vertical backwall 14. An appliance drive mechanism 40 having a guide 41 is supported by countertop 13. In the preferred fabrication of the present invention, button 19 is operatively
20 coupled to a timer mechanism (not shown) together with a light 28 within oven 15 which illuminates the interior of oven 15 each time button 19 is activated.

 Figure 5 sets forth a front view of pantry 20. As described above, pantry 20 includes a vertical cabinet 22 having a hinged door 23. As is also described
25 above, pantry 20 supports a drawer 21 and a water reservoir 30. By means shown below in greater detail, reservoir 30 supports a quantity of water maintained at room temperature as well as a quantity of water substantially cooled therefrom. By means also described below in greater detail, a pair of water supply buttons 31 and 32 operate internal valves (seen in Figures 7 through 10) which selectively
30 dispense either warm or substantially cooled water for use in food mixture. In the

front view shown in Figure 5, the forward most nozzle 36 dispenses warm water each time button 31 is pressed. The warm water simply flows downwardly and outwardly in the direction indicated by arrow 38 each time button 31 is pressed. As is better seen in Figure 9, a similar nozzle 37 is positioned behind nozzle 36 for dispensing cooled water.

Figure 6 sets forth a section view of pantry 20 taken along section lines 6-6 in Figure 5. As described above supports a drawer 21 and a door 23. Door 23 encloses a cabinet 22. Pantry 20 further defines an interior cavity 46 which receives and supports a cooling unit 35. Cooling unit 35 may be fabricated in a variety of cooling apparatus. In its preferred fabrication however, cooling unit 35 comprises a sealed plastic unit supporting a quantity of liquid which, when placed within a freezer is caused to freeze and thereafter supplies substantial heat absorbing qualities when cooling unit 35 is placed within proximity to water reservoir 30. Thus, periodically the child user removes cooling unit 35 and places is within a conventional freezer and, after a suitable period of time, replaces the cooling unit within pantry 20 as shown in Figure 6 to provide cooling within reservoir 30. Such cooling units are well known in the art and are simple in their use and operation.

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Figure 7 sets forth a top view of water reservoir 30. As described above, water reservoir 30 is supported within pantry 20 in the manner shown in Figure 5 and includes a warm water button 31 and a cooled water button 32. In the manner described below, water button 31 dispenses water from a room temperature reservoir while button 32 dispenses water from a cooled water reservoir. A pair of removable water caps 33 and 34 provide closure for filling apertures used in replenishing the water supply within each water reservoir.

Figure 8 sets forth a section view of water reservoir 30 taken along section lines 8-8 in Figure 7. Reservoir 30 includes a room temperature cavity 120 and a

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cool water cavity 130. Water cavities 120 and 130 are separated by an insulating air space 121. A filler cap 33 provides access for filling cavity 120 while a filler cap 34 provides access for filling cavity 130. A nozzle 36 is operatively coupled to water cavity 120 by means set forth below in Figure 9. Suffice it to note here
5 that a button 31 operated by the user opens and closes valve controlling the water flow from water cavity 120 through nozzle 36. A second nozzle 37 is similarly coupled to water cavity 130 in the manner shown in Figure 10 whereby cooled water may be dispensed through nozzle 37 by the users actuation of button 32 (seen in Figure 10).

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Thus, independent supplies of water at room temperature and substantially cooled temperatures is provided within reservoir 30 and is independently dispensable through nozzles 36 and 37. This facilitates the users capability for mixing either room temperature or substantially cooled water as the particular
15 food preparation being used may require. Suffice it to note here that in the anticipated use of the present invention toy kitchen, a quantity of food powder is utilized which is best mixed with either room temperature or cooled water in order to provide optimum mixing characteristics.

Figure 9 sets forth a section view of water reservoir 30 taken along section lines 9-9 in Figure 7. As described above, water reservoir 30 supports a warm water cavity 120 and a cooled water cavity 130 separated by an insulating air space 121. A pair of removable filler caps 33 and 34 facilitate refilling of the water quantities within water cavities 120 and 130 respectively. A valve 123 is
20 operatively coupled to cavity 120 by a drain aperture 122. Valve 123 is further coupled to nozzle 36 and is actuated by button 31. Thus, in the position shown valve 123 remains closed and water flow from cavity 120 is prevented. When the user presses button 31 however, valve 123 is opened facilitating the flow of water from cavity 120 through 122 and outwardly and downwardly from nozzle 36.

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Figure 10 sets forth a section view of water reservoir 30 taken along section lines 10-10 in Figure 7. Water reservoir 30 includes a pair of water cavities 120 and 130 separated by an insulating air space 121. A pair of removable filler caps 33 and 34 facilitate access to and refilling of water cavities 120 and 130. A pair of nozzles 36 and 37 are operatively coupled to water cavities 120 and 130 respectively. Water cavity 130 includes a drain 132 coupled to a valve 133. Valve 133 is further coupled to nozzle 37. A pushbutton 32 is operatively coupled to valve 133 and facilitates opening and closing of valve 133. In the closed position shown in Figure 10, water flow from cavity 130 is prevented. However, when the user presses button 32, valve 133 is opened allowing water flow downwardly from cavity 130 through drain 132 and outwardly through nozzle 37. In this manner, the user is able to selectively dispense the cooled water from cavity 130 through nozzle 37.

Figure 11 sets forth a perspective view of toy kitchen 10 in combination with a milkshake maker 50. As mentioned above, toy kitchen 10 utilizes a built in drive mechanism which is operative in combination and cooperation with a selected one of a plurality of food making appliances. In the example shown in Figure 11, a milkshake maker 50 described below in greater detail is operatively coupled to the drive mechanism within toy kitchen 10 to provide preparation of a water based food product.

More specifically, toy kitchen 10 is preferably fabricated of a molded plastic material and suitably sized for easy handling by a child user. Toy kitchen 10 includes a toy kitchen cabinet 11 supporting a countertop 13 and a table 12. Table 12 is secured to countertop 13 by a hinge 25 allowing table 12 to pivot from its horizontal position downwardly in the manner indicated by arrow 26. Toy kitchen cabinet 11 further includes a vertical backwall 14 which extends upwardly from countertop 13. Cabinet 11 further includes a simulated oven 15

having a pair of oven doors 17 and 18. A cabinet door 16 is also supported by cabinet 11.

Toy kitchen 10 further includes a pantry 20 having a drawer 21 supported
5 therein. Pantry 20 further includes a cabinet 22 having a door 23 supported
thereon. Pantry 20 further includes a water reservoir 30 having a pair of water
valve buttons 31 and 32 operable thereon. Reservoir 30 further includes a pair of
water fill caps 33 and 34. As is better seen in Figure 6, pantry 20 also supports a
cooling element 35 which provides cooling for water within reservoir 30 as
10 described below.

Thus, in the example of Figure 11, milkshake maker 50 is operatively
coupled to appliance drive mechanism 40 by simply placing milkshake maker 50
upon countertop 13 and allowing guide 41 to properly position the milkshake
15 maker for engagement with the internal drive mechanism. It will be recalled that
the internal drive mechanism is set forth above in great detail in conjunction with
Figure 3. Suffice it to note here that the appliance drive mechanism provides
rotational power which is coupled to milkshake maker 50 and utilized in
accordance with the structure described below in Figures 13 through 15.

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Figure 12 sets forth a side view of milkshake maker 50. Milkshake maker
50 includes a support base 51 having a vertically extending stand 52. An arm 53
is supported upon stand 52 in the manner best seen in Figure 13. Arm 53 further
supports a head 54 which in turn supports a downwardly extending mixing blade
25 57. A milkshake container is supported upon base 51 beneath head 54. Mixer
blade 57 extends downwardly into shake container 58 in the manner seen in
Figure 13.

Figure 13 sets forth a section view of milkshake maker 50 taken along
30 section lines 13-13 in Figure 11. Milkshake maker 50 includes a base 51

supporting a stand 52. An arm 53 is supported by stand 52 and further supports a head 54. A mixer blade 57 is rotatably supported by head 54. A shake container 58 is supported beneath head 54 and receives lower end 48 of mixer blade 57.

5 In accordance with the present invention, milkshake maker 50 includes a coupler 140 which engages socket 111 of appliance driver 42 in the manner set forth above in Figure 3. Coupler 40 is further coupled to a vertical shaft 141 which extends upwardly through an arm support 150. The upper end of shaft 141 supports a gear 142. Arm 53 supports a rotatable shaft 144 having a gear 143
10 engaging gear 142 and a gear 145 supported within head 154. A shaft 147 is rotatably supported within head 54 and is coupled to a gear 146 engaging 145. Shaft 147 extends downwardly from head 54 and is operatively coupled to mixer blade 57.

15 In operation, coupler 140 receives rotational power from appliance drive mechanism 40 (seen in Figure 3) and transmits rotational power upwardly to gear 142 via shaft 141. The rotation of gear 142 produces corresponding rotation of gear 143, shaft 144 and gear 145. Gear 146 and shaft 147 are rotated due to the engagement of gears 145 and 146. The rotation of shaft 147 produces a
20 corresponding rotation of mixer blade 157.

 To facilitate the placement and removal of shake container 58 beneath head 54, the combined structure of head 54, arm 53, arm support 150 and coupler 140 may be raised with respect to stand 52 in the direction indicated by arrow
25 149. This raised position shown in phantom-line depiction in Figure 13 correspondingly raises end 148 of mixer blade 57 allowing shake container 58 to be placed within or withdrawn from milkshake maker 50.

 Figure 14 sets forth a section view of milkshake maker 50 taken along
30 section lines 14-14 in Figure 12. Milkshake maker 50 includes a base 51

supporting a stand 52 which in turn supports an arm 53. An arm support 150 extends downwardly from arm 53 through stand 52. Arm support 150 further supports a shaft 141 coupled to a coupler 140 at its lower end and a gear 142 at its upper end.

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Figure 15 sets forth a section view of milkshake maker 50 taken along section lines 15-15 in Figure 12. Milkshake maker 50 includes a base 51 and a head 54. Head 54 further supports a rotatable shaft 147 having a gear 146 at one end and being coupled to mixer blade 57 at its lower end.

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Figure 16 sets forth a perspective assembly view of toy kitchen 10 in combination with a food blender appliance generally referenced by numeral 60. As mentioned above, food blender appliance 60 is one of several appliances shown in Figure 1 which may be interchangeable utilized in combination with the drive mechanism of toy kitchen 10.

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More specifically, toy kitchen 10 is preferably fabricated of a molded plastic material and suitably sized for easy handling by a child user. Toy kitchen 10 includes a toy kitchen cabinet 11 supporting a countertop 13 and a table 12. Table 12 is secured to countertop 13 by a hinge 25 allowing table 12 to pivot from its horizontal position downwardly in the manner indicated by arrow 26. Toy kitchen cabinet 11 further includes a vertical backwall 14 which extends upwardly from countertop 13. Cabinet 11 further includes a simulated oven 15 having a pair of oven doors 17 and 18. A cabinet door 16 is also supported by cabinet 11.

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Toy kitchen 10 further includes a pantry 20 having a drawer 21 supported therein. Pantry 20 further includes a cabinet 22 having a door 23 supported thereon. Pantry 20 further includes a water reservoir 30 having a pair of water valve buttons 31 and 32 operable thereon. Reservoir 30 further includes a pair of

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water fill caps 33 and 34. As is better seen in Figure 6, pantry 20 also supports a cooling element 35 which provides cooling for water within reservoir 30 as described below.

5 In accordance with the anticipated use of toy kitchen 10, blender 60 which is fabricated in the manner set forth below in greater detail utilizes a drive coupling mechanism substantially identical to the mechanism for food mixer 80 shown in Figure 3 and described above. This mechanism provides operative coupling between appliance driver 42 and the operative apparatus within food
10 blender appliance 60.

Figure 17 sets forth a side elevation view of food blender 60. Food blender 60 includes a base 61 supporting a container 62 having a cap 63 on the upper portion thereof. A spout 65 facilitates pouring liquid from blender 60
15 while a handle 64 facilitates handling and carrying food blender 60.

Figure 18 sets forth a front view of food blender 60. As described, food blender 60 includes a base 61 supporting a container 62 and having a cap 63 supported thereon. A spout 65 facilitates pouring liquid material from container
20 62.

Figure 19 sets forth a section view of food blender 60 taken along section lines 19-19 in Figure 17.

25 More specifically, food blender 60 includes a base 61 supporting a container 62 which in turn supports a removable cap 63. A spout 65 is formed on the upper edge of container 62 and facilitates pouring liquid from container 62.

Food blender 60 further includes a rotatable coupler 160 which is
30 fabricated to engage socket 111 of appliance driver 42 in the manner set forth

above in Figure 3. It will be recalled that rotational power is applied to the appliance drive apparatus within toy kitchen 10 in the manner also shown in Figure 3. Coupler 160 is coupled to a shaft 161 which extends upwardly through a bearing 162 and a seal 163. A shaft 164 extends upwardly beyond seal 163 and
5 engages an impeller 165.

In operation, rotational power coupled to coupler 160 from the appliance drive mechanism within toy kitchen 10 in the manner set forth above in Figure 3 rotates coupler 160 together with shaft 161. Bearing 162 supports this rotation
10 while seal 163 prevents liquid leakage from the interior of container 62. With the rotation of shaft 164, impeller 165 provides the desired food blending action within container 62.

Figure 20 sets forth a section view of food blender 60 taken along section
15 lines 20-20 in Figure 18.

More specifically, food blender 60 includes a base 61 supporting a container 62 which in turn supports a removable cap 63. A spout 65 is formed on the upper edge of container 62 and facilitates pouring liquid from container 62.
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Food blender 60 further includes a rotatable coupler 160 which is fabricated to engage socket 111 of appliance driver 42 in the manner set forth above in Figure 3. It will be recalled that rotational power is applied to the appliance drive apparatus within toy kitchen 10 in the manner also shown in
25 Figure 3. Coupler 160 is coupled to a shaft 161 which extends upwardly through a bearing 162 and a seal 163. A shaft 164 extends upwardly beyond seal 163 and engages an impeller 165.

In operation, rotational power coupled to coupler 160 from the appliance
30 drive mechanism within toy kitchen 10 in the manner set forth above in Figure 3

rotates coupler 160 together with shaft 161. Bearing 162 supports this rotation while seal 163 prevents liquid leakage from the interior of container 62. With the rotation of shaft 164, impeller 165 provides the desired food blending action within container 62.

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Figure 21 sets forth a perspective view of toy kitchen 10 in combination with a fondue maker 70. As described above, in accordance with an important aspect of the present invention, fondue maker 70 provides one of a plurality of interchangeable appliances which may be utilized in combination with toy kitchen 10.

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More specifically, toy kitchen 10 is preferably fabricated of a molded plastic material and suitably sized for easy handling by a child user. Toy kitchen 10 includes a toy kitchen cabinet 11 supporting a countertop 13 and a table 12. Table 12 is secured to countertop 13 by a hinge 25 allowing table 12 to pivot from its horizontal position downwardly in the manner indicated by arrow 26. Toy kitchen cabinet 11 further includes a vertical backwall 14 which extends upwardly from countertop 13. Cabinet 11 further includes a simulated oven 15 having a pair of oven doors 17 and 18. A cabinet door 16 is also supported by cabinet 11.

15

20

Toy kitchen 10 further includes a pantry 20 having a drawer 21 supported therein. Pantry 20 further includes a cabinet 22 having a door 23 supported thereon. Pantry 20 further includes a water reservoir 30 having a pair of water valve buttons 31 and 32 operable thereon. Reservoir 30 further includes a pair of water fill caps 33 and 34. As is better seen in Figure 6, pantry 20 also supports a cooling element 35 which provides cooling for water within reservoir 30 as described below.

25

Thus, the child user is able to position fondue maker 70 in the manner shown in Figure 21 and lower the fondue maker upon drive apparatus 40 to provide engagement between the operative mechanism within the fondue maker and the drive apparatus supported within toy kitchen 10.

5

Figure 22 sets forth a top view of fondue maker 70. Fondue maker 70 includes an open cover 71 defining a shaped opening 72. An interior cavity 73 within fondue maker 70 supports a multi-bladed agitator 74. Agitator 74 is driven by a coupler 75.

10

Figure 23 sets forth a section view of fondue maker 70 taken along section lines 23-23 in Figure 22. Fondue maker 70 includes a bowl 76 supported within a base 77. Bowl 76 further supports a cover 71 having a shaped opening 72. Bowl 76 further defines an interior 73 within which a multi-bladed agitator 74 is supported by a coupler 75.

15

Fondue maker 70 further includes a coupler 170 configured to engage appliance driver 42 (seen in Figure 3) when fondue maker 70 is positioned upon countertop 13 in the manner shown in Figure 21. Coupler 170 is coupled to a shaft 171 which extends upwardly to a clutch mechanism 172. Clutch mechanism 172 is further coupled to a shaft 173 which passes upwardly into bowl 176 through a liquid seal 174. Coupler 175 is secured to the upper end of shaft 173.

20

In operation, as coupler 170 is rotated by the appliance drive mechanism within toy kitchen 10 (seen in Figure 21), shaft 171 and 173 rotate in unison providing direct drive between coupler 170 and coupler 75. Correspondingly, agitator 74 is rotated in direct correspondence to coupler 170. It has been found that the direct coupling between coupler 170 and agitator 74 provides sufficient speed of rotation to produce the desired fondue mixture action.

30

Figure 24 sets forth a section view of fondue maker 70 taken along section lines 24-24 in Figure 23. Figure 24 is substantially identical to the structure shown in Figure 23 with the difference being the use of a speed reduction gear mechanism rather than the direct drive mechanism utilized in the embodiment of Figure 23. Thus, the embodiment of fondue maker 70 shown in Figure 24 provide substantially slower rotation of agitator 74. But for this difference however, the entire structure shown in Figure 24 is substantially identical to that shown in Figure 23.

Thus, in the embodiment shown in Figure 24, fondue maker 70 includes a base 77 supporting a bowl 76 having an interior cavity 73 therein. A cover 71 having an opening 72 formed therein rests upon the upper surface of bowl 76. A coupler 75 and multi-bladed agitator 74 are rotatably supported within bowl 76.

Base 77 supports a coupler 170 is rotatably supported within base 77 and is coupled to a shaft 175. Shaft 175 is coupled to a speed reduction gear 176 which in turn is coupled to a speed reduction gear 178. The latter is supported by a shaft 177. Gear 178 is further coupled to a speed reduction gear 179 which in turn rotates a shaft 180. Shaft 180 is coupled to a clutch 172 the output of which is further coupled to a shaft 173. Shaft 173 extends upwardly through a seal 174 to the interior of bowl 76. A coupler 75 is secured to the upper end of shaft 173 and engages a multi-bladed agitator 74.

The operation of the embodiment of fondue maker 70 shown in Figure 24 is substantially identical to that set forth and described above for the embodiment of Figure 23. The only difference is found in the action of speed reduction gears 176, 178 and 179 in the operative power coupling from coupler 170 to clutch 172. The action of these gears reduces the rotational speed of multi-bladed agitator 74.

Figure 25 sets forth a perspective view of the present invention toy kitchen in combination with a food mixer appliance 80. It will be recalled that a plurality of food preparation appliances may be interchangeably utilized in combination with the present invention toy kitchen. Thus, Figure 25 sets forth
5 the combination of food mixer 80 and toy kitchen 10.

More specifically, toy kitchen 10 is preferably fabricated of a molded plastic material and suitably sized for easy handling by a child user. Toy kitchen 10 includes a toy kitchen cabinet 11 supporting a countertop 13 and a table 12.
10 Table 12 is secured to countertop 13 by a hinge 25 allowing table 12 to pivot from its horizontal position downwardly in the manner indicated by arrow 26. Toy kitchen cabinet 11 further includes a vertical backwall 14 which extends upwardly from countertop 13. Cabinet 11 further includes a simulated oven 15 having a pair of oven doors 17 and 18. A cabinet door 16 is also supported by
15 cabinet 11.

Toy kitchen 10 further includes a pantry 20 having a drawer 21 supported therein. Pantry 20 further includes a cabinet 22 having a door 23 supported thereon. Pantry 20 further includes a water reservoir 30 having a pair of water
20 valve buttons 31 and 32 operable thereon. Reservoir 30 further includes a pair of water fill caps 33 and 34. As is better seen in Figure 6, pantry 20 also supports a cooling element 35 which provides cooling for water within reservoir 30 as described below.

25 Thus, the child user is able to assemble food mixer 80 to countertop 13 and provide operative power coupling to the drive apparatus supported within toy kitchen 10 in the manner set forth above in Figure 3.

Figure 26 sets forth a top view of food mixer 80. Food mixer 80 includes
30 a base 81 supporting a stanchion 82 which in turn supports a head 83. Head 83 is

pivotally secured to stanchion 82 by a hinge 87. A mixing bowl 85 is further supported upon base 81 beneath head 83. As is better seen in Figure 27, a mixer blade 84 is rotatably supported by head 83 and extends downwardly into the interior of mixing bowl 85.

5

Figure 27 sets forth a section view of food mixer 80 taken along section lines 27-27 in Figure 26. Food mixer 80 includes a base 81 defining a receptacle 88 which receives a mixer bowl 85. Bowl 85 is rotatable within receptacle 88 to better simulate the operation of a food mixer.

10

Food mixer 80 further includes a vertically extending stanchion 82 which in turn pivotally supports a mixer head 83 at a hinge 87.

A coupler 190 is rotatably supported within base 81 and is operative in the manner set forth above in Figure 3 to engage the driver mechanism within toy kitchen 10. Coupler 90 is coupled to a shaft 191 which in turn is coupled to a gear 192. Gear 192 is further coupled to a series of gears 193, 194 and 195 within base 81. A shaft 196 extends upwardly from gear 195 and is rotatable therewith. A spring coupler 197 is joined to the upper end of shaft 196. A cooperating coupler 198 is supported within head 83 and engages coupler 197 when head 83 is pivoted downwardly to the operative position shown in solid line depiction in Figure 27. Coupler 198 is further coupled to a shaft 199 which supports a gear 200. Head 83 supports a shaft 201 having a gear 202 engaging gear 200 and a gear 203. A shaft 205 is rotatably supported by a coupler 206 and further supports a gear 204 which engages gear 203. Mixer blade 84 is received within coupler 206 and extends downwardly into the interior of mixing bowl 85.

In operation, with head 83 pivoted downwardly to operating position shown in solid line representation, rotation of coupler 180 in the manner set forth above in Figure 3, produces corresponding rotational power which is coupled by

30

gears 192 through 195 to shaft 196. Couplers 197 and 198 cooperate to transfer the rotational power to shaft 199 and gear 200. Correspondingly, gear 202 rotates shaft 201 which in turn rotates gear 203. Gear 204 is rotated by gear 203 causing rotation of shaft 205 and coupler 206. The rotation of coupler 206 produces
5 corresponding rotation of mixer blade 84.

To facilitate withdraw of bowl 85, head 83 pivots upwardly about hinge 87 in the direction indicated by arrow 89. The action of couplers 197 and 198 facilitates the disengagement and engagement required by this pivotal movement.
10

Figure 28 sets forth a section view of food mixer 80 taken along section lines 28-28 in Figure 27. Mixer 80 includes a base 81 supporting a bowl 85. A gear 192 coupled to shaft 191 receives rotational power from coupler 190 (seen in Figure 27). A succession of gears 193, 194 and 195 transfer this rotational power
15 to shaft 196 which, in the manner described above, produces the mixing action of food mixer 80.

Figure 29 sets forth a perspective view of toy kitchen 10 in combination with a sorbet maker generally referenced by numeral 90. As described above, the
20 present invention toy kitchen facilitates the combination of a selected one of a plurality of cooperating food preparation appliances to operate under the control of the internal drive apparatus of toy kitchen 10.

More specifically, toy kitchen 10 is preferably fabricated of a molded
25 plastic material and suitably sized for easy handling by a child user. Toy kitchen 10 includes a toy kitchen cabinet 11 supporting a countertop 13 and a table 12. Table 12 is secured to countertop 13 by a hinge 25 allowing table 12 to pivot from its horizontal position downwardly in the manner indicated by arrow 26. Toy kitchen cabinet 11 further includes a vertical backwall 14 which extends
30 upwardly from countertop 13. Cabinet 11 further includes a simulated oven 15

having a pair of oven doors 17 and 18. A cabinet door 16 is also supported by cabinet 11.

Toy kitchen 10 further includes a pantry 20 having a drawer 21 supported
5 therein. Pantry 20 further includes a cabinet 22 having a door 23 supported thereon. Pantry 20 further includes a water reservoir 30 having a pair of water valve buttons 31 and 32 operable thereon. Reservoir 30 further includes a pair of water fill caps 33 and 34. As is better seen in Figure 6, pantry 20 also supports a cooling element 35 which provides cooling for water within reservoir 30 as
10 described below.

Thus, sorbet maker 90 when properly positioned upon countertop 13 and engaging drive mechanism 40 is utilized in producing a food product similar to a sorbet.
15

Figure 30 sets forth a perspective view of sorbet maker 90. Sorbet maker 90 includes a base 91 supporting a body 92 which in turn supports a cover 93. Cover 93 is removable to provide access to the interior of body 92.

20 Figure 31 sets forth a section view of sorbet maker 90 taken along section lines 31-31 in Figure 30. Sorbet maker 90 includes a base 91 supporting a body 92. Body 92 includes a cover 93 joined to the remainder of body 92 by an irregular seam 94. The undersurface of cover 93 includes a socket 95 which receives a cooperating coupler in a snap-fit attachment. Coupler 97 further
25 supports a mixing blade 96.

Sorbet maker 90 further includes an inner container 112 having a sealed fluid reservoir 113. Fluid reservoir 113 is filled with a quantity of glycol solution of the type typically used in providing a reusable source of coolant. Thus, inner
30 container 112 may be removed from body 92 and placed within a freezer to

temporarily cool or freeze sealed fluid 113 and thereby provide a cooling action for material placed within inner container 112. A quantity of water based sorbet mixture 98 is deposited within the interior of container 112 and is significantly cooled by the action of fluid 113.

5

Base 91 supports a coupler 114 which, in the manner described above, engages appliance driver 42 (seen in Figure 3). Coupler 114 is joined to a shaft 115 which in turn is joined to a coupler 116. Coupler 116 engages couplers 117 and 118 which provide rotational coupling between coupler 116 and inner
10 container 112. Coupler 118 engages a cooperating socket within the underside of inner container 112.

In operation, a quantity of water based sorbet material is deposited within inner container 112. Inner container 112 has been previously cooled within a
15 freezer or the like to provide a source of cooling to the sorbet material. Thereafter, cover 93 supporting mixing blade 96 is secured to body 92. When the drive mechanism of toy kitchen 10 (seen in Figure 29) is activated, the rotational power applied to coupler 114 is communicated to inner container 112. As a result, inner container 112 and the sorbet material 98 supported therein is rotated
20 about mixing blade 96. Mixing blade 96 is maintained in a stationary condition by its attachment to cover 93.

As a result, the sorbet mixture within sorbet maker 90 is progressively cooled by fluid 113 and mixed by the rotation of container 12 against static
25 mixing blade 96. When the desired mixing time is complete, the activation of the appliance drive mechanism is terminated and cover 93 is removed simultaneously moving mixing blade 96. Sorbet material 98 within inner container 12 is now ready for consumption.

Figure 32 sets forth a top view of sorbet maker 90. Figure 32 shows cover 93 of sorbet maker 90 supporting stationary mixing blade 96.

Figure 33 sets forth an alternate embodiment of the present invention combining a manual power unit generally referenced by numeral 210 with a direct drive embodiment of fondue maker 70. Fondue maker 70 is described above particularly in Figure 23 which sets forth the direct drive embodiment thereof.

Manual power unit 210 provides a portable substitute hand operated source of rotational power for use with fondue maker 70. Thus, manual power unit 210 includes a base 211 and a cooperating cover 212 forming a housing therebetween. A lever 213 is pivotally supported about a gear 214 within the interior of base 211. A plurality of drive gears 215, 216, 217 and 218 couple the rotational drive from lever 213 to a coupler 219. Coupler 219 is rotatably supported beneath drive unit 213 to provide operative rotational power to the drive coupler of fondue maker 70.

In operation, as lever 213 is moved back and forth the cooperation of gears 214 through 218 provide rotational movement of the mixing mechanism within fondue maker 70 to produce the desired food mixture without the need of employing the battery powered drive apparatus within toy kitchen 10.

While particular embodiments of the invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from the invention in its broader aspects. Therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true spirit and scope of the invention.

THAT WHICH IS CLAIMED IS:

1. A toy kitchen comprising:

a toy kitchen cabinet having a countertop surface;

an appliance drive supported by said countertop and having an appliance driver;

a drive mechanism within said toy kitchen cabinet coupled to said appliance driver providing powered rotational power to said appliance driver; and

a plurality of toy appliances each having a rotational element and a coupler and each being constructed to be placed upon said countertop such that their respective couplers cooperatively engage said appliance driver.

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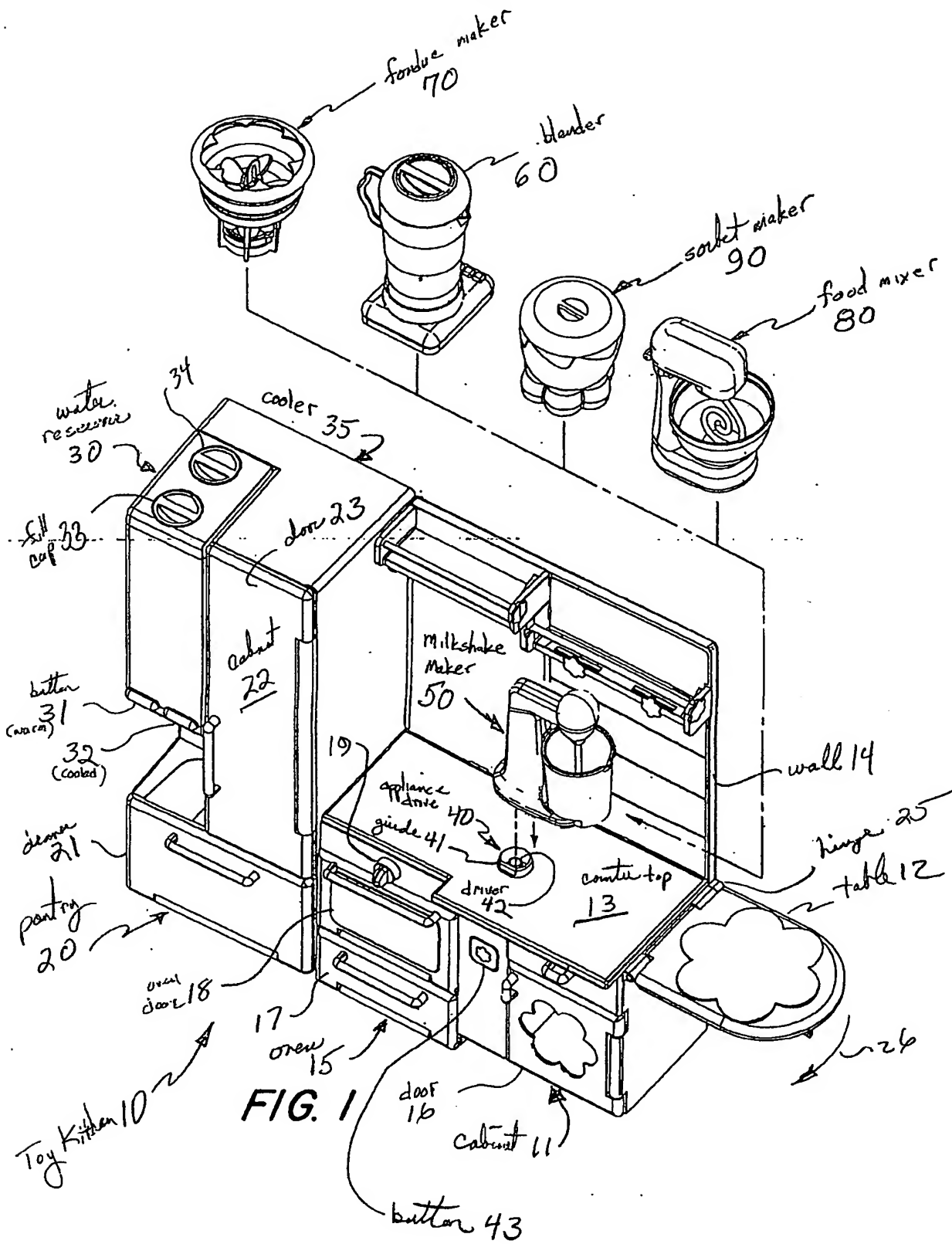


FIG. 2

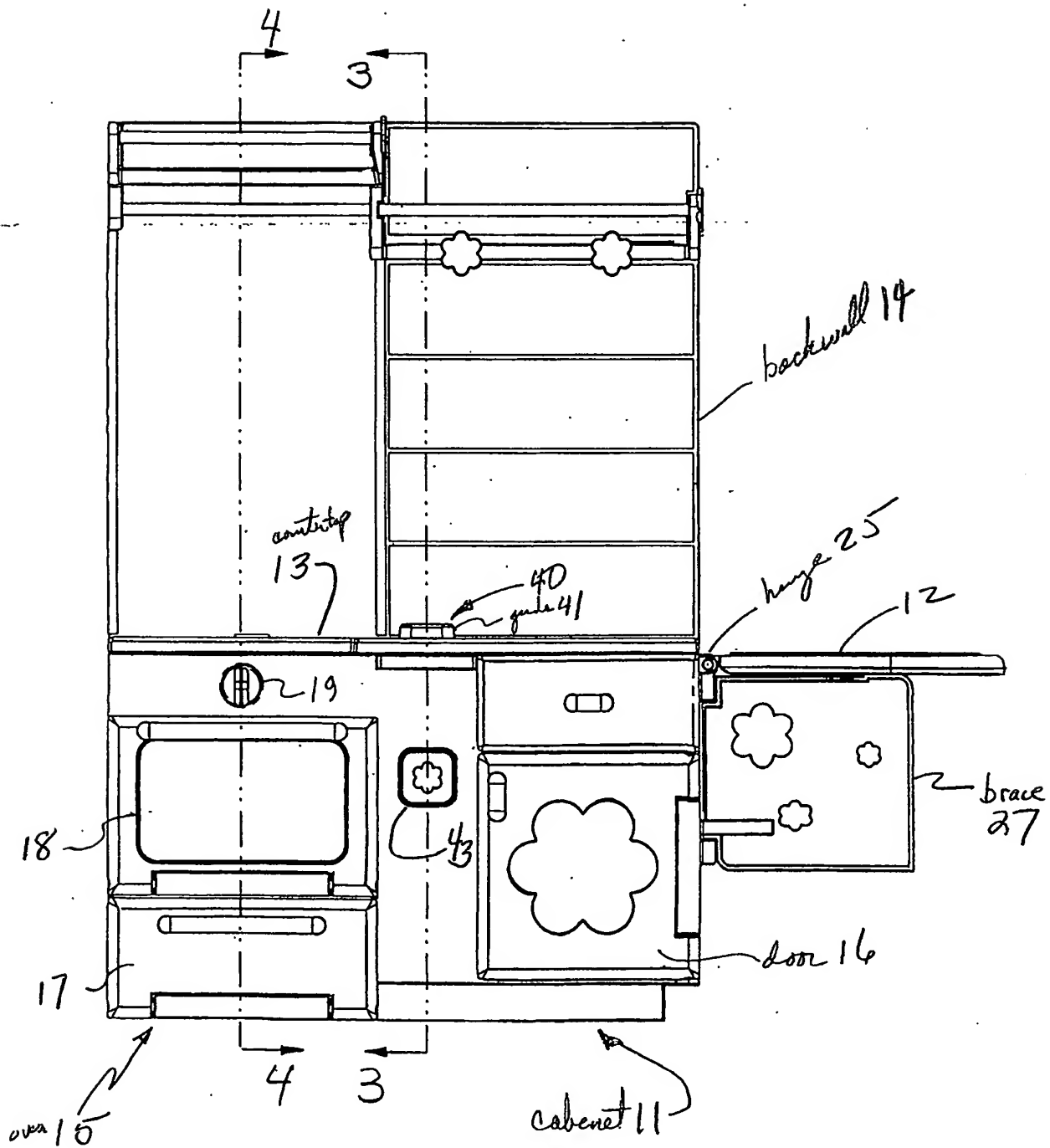


FIG. 3

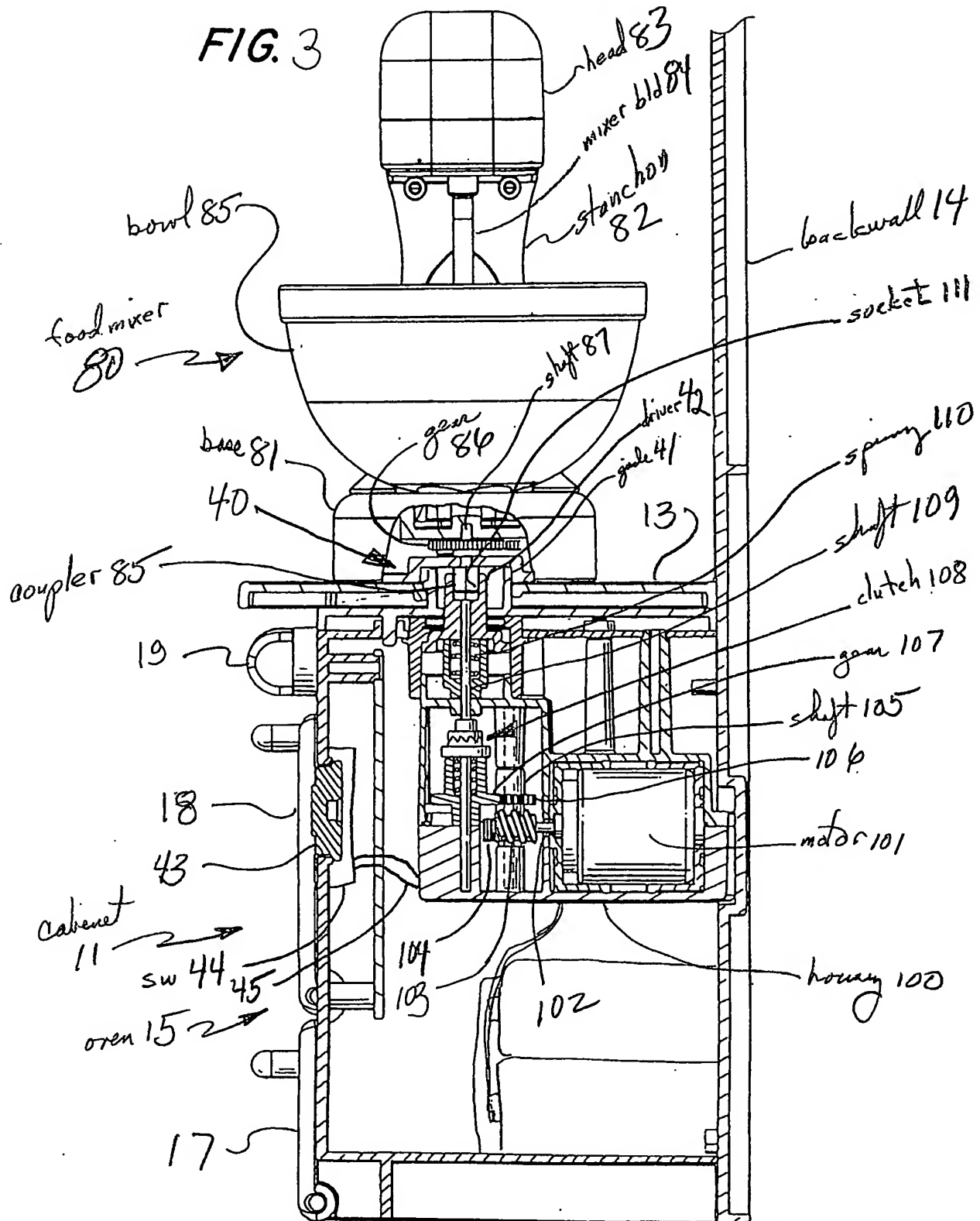
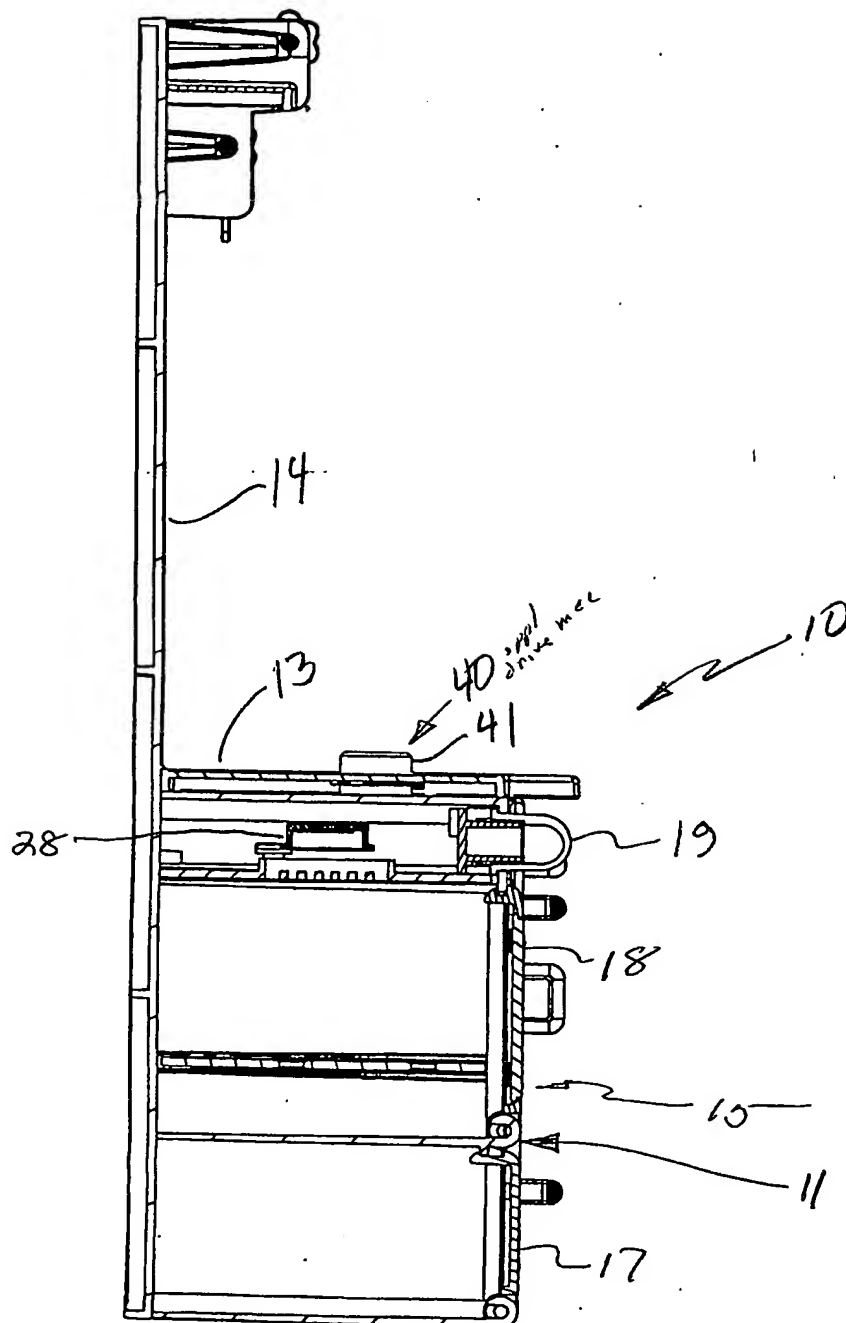


FIG. 4



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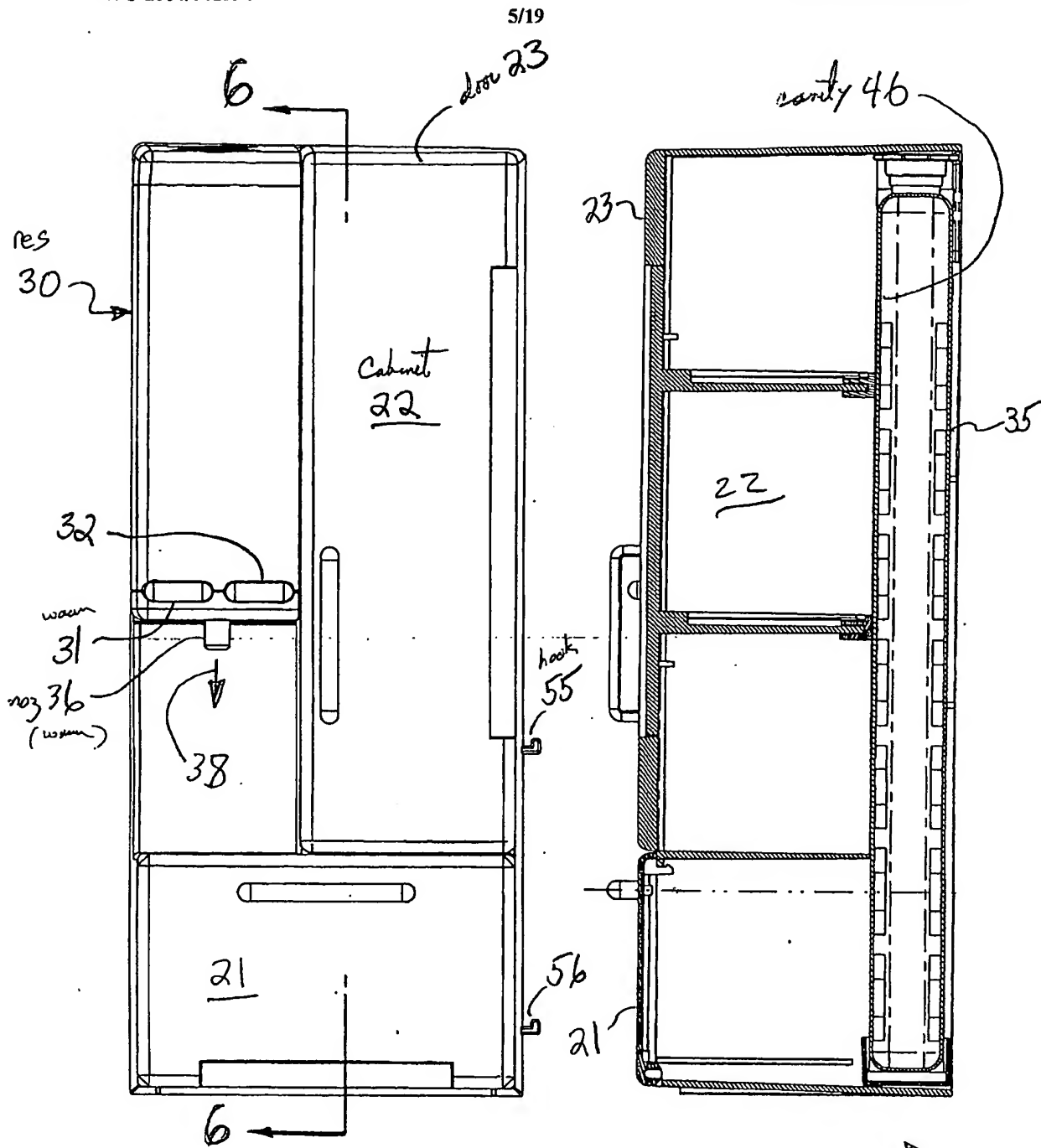
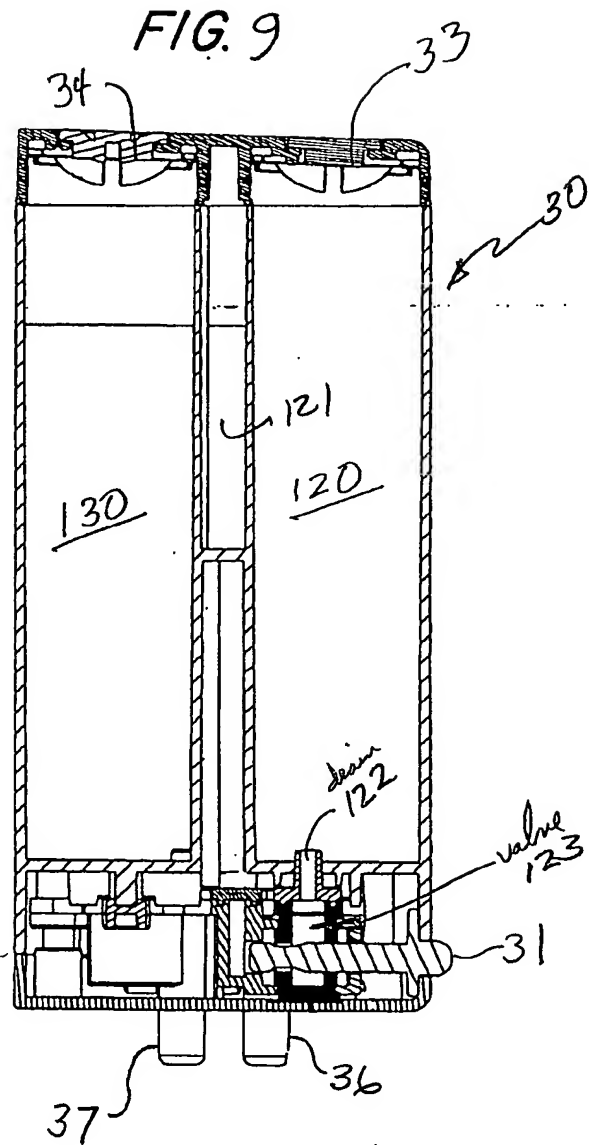
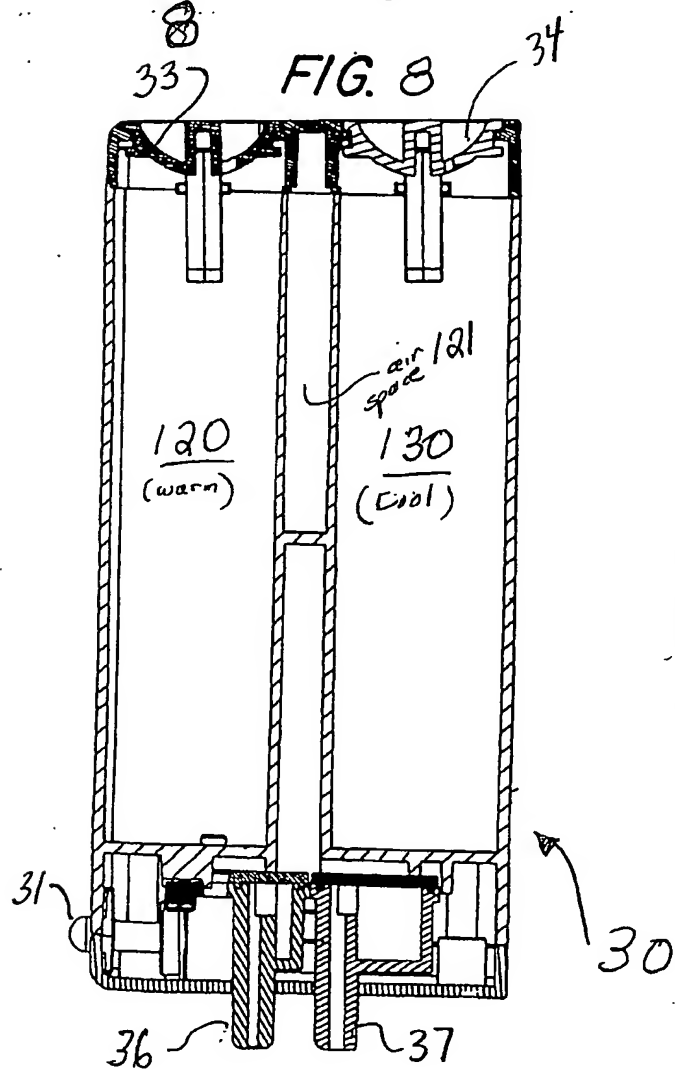
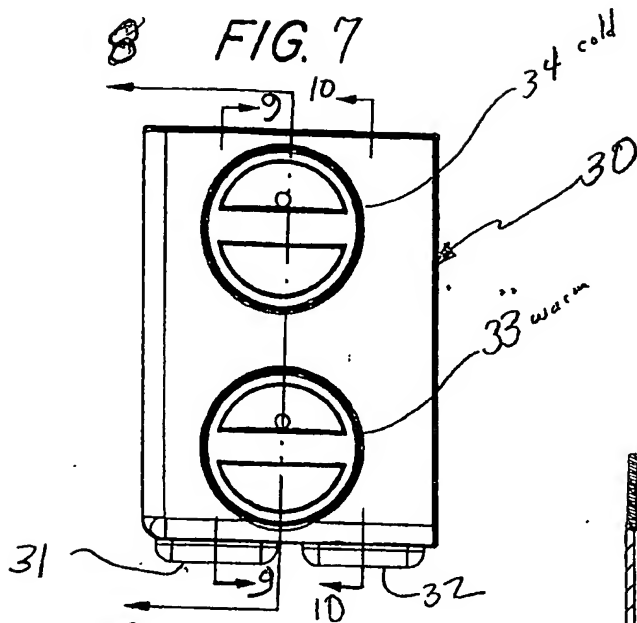


FIG. 5

FIG. 6

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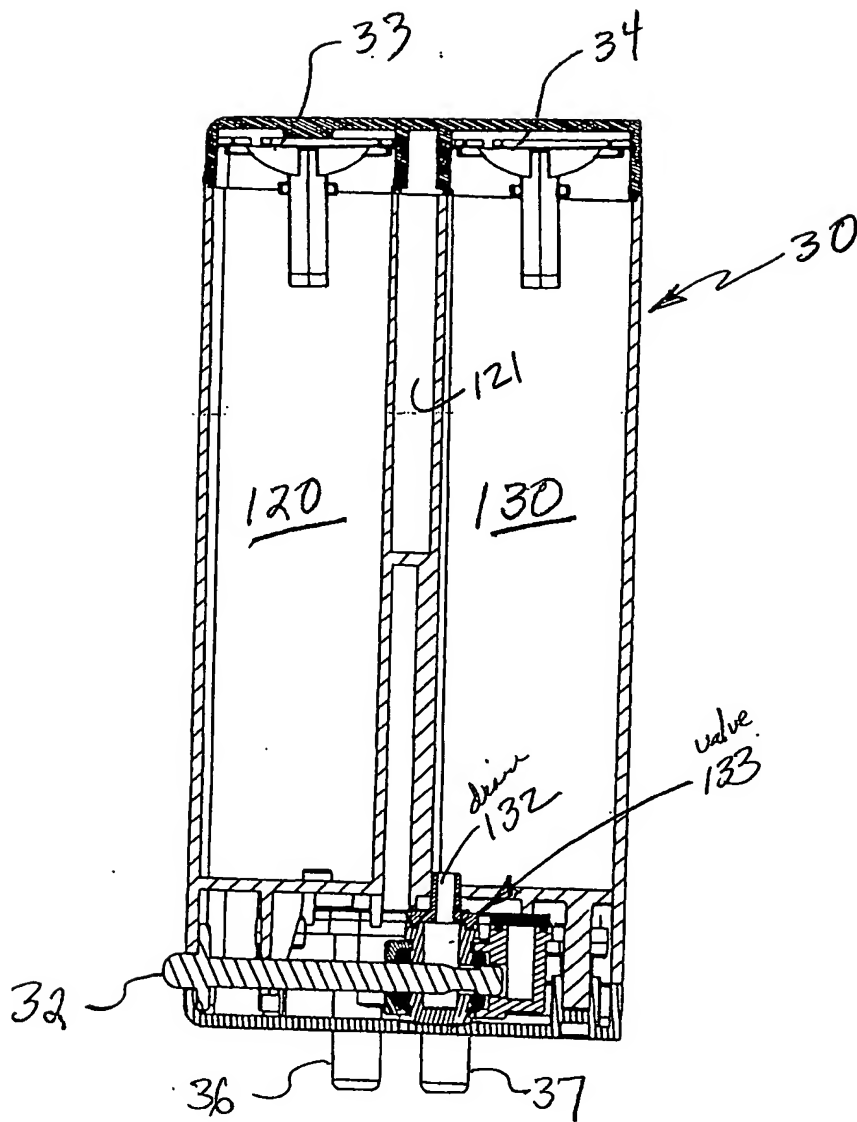


FIG. 10

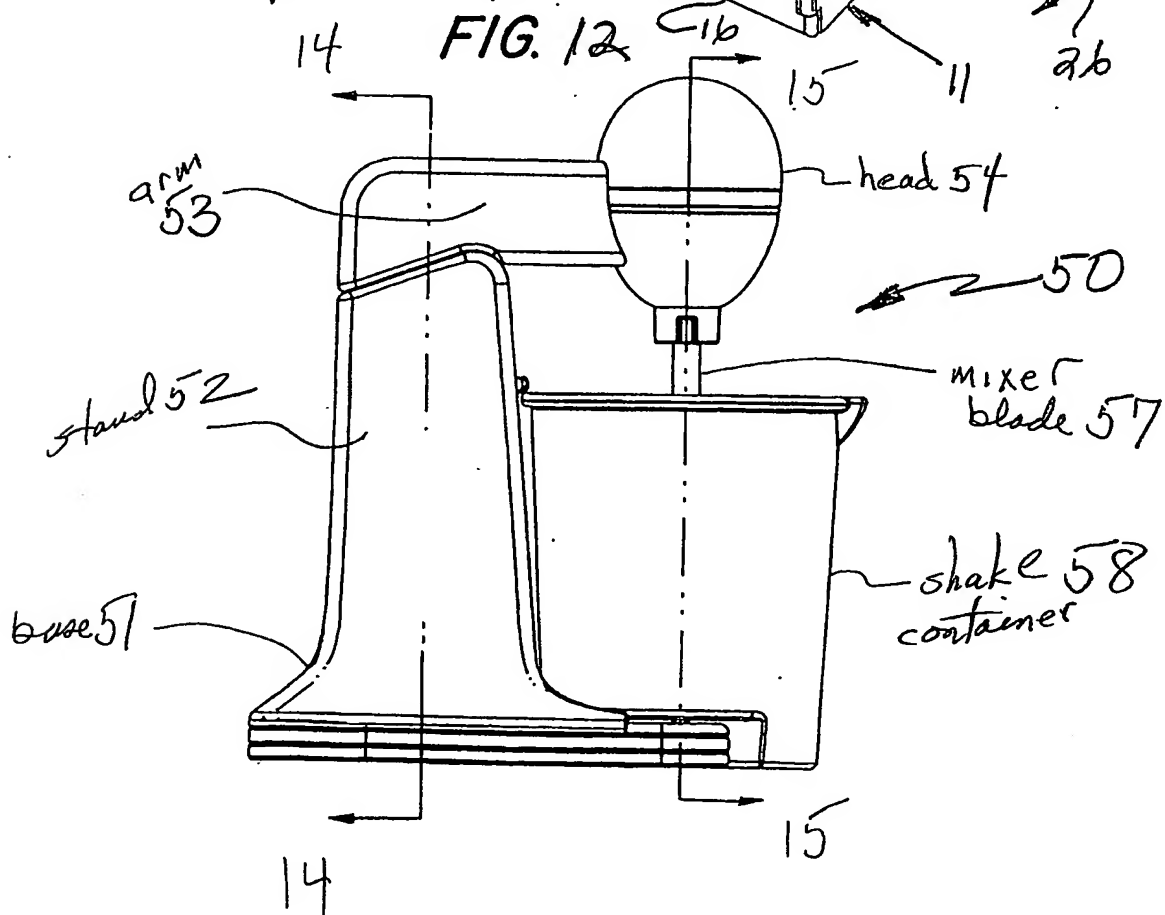
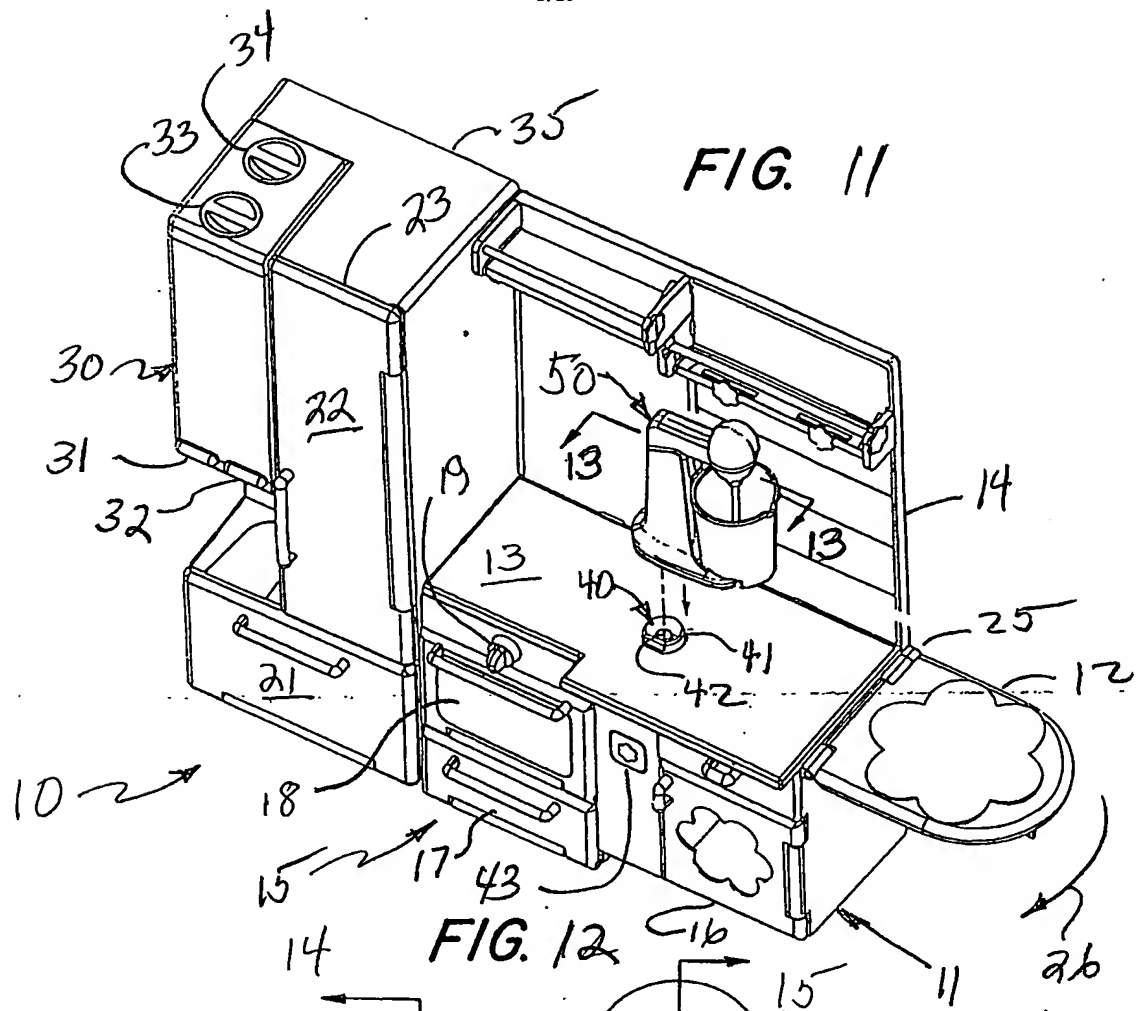


FIG. 13

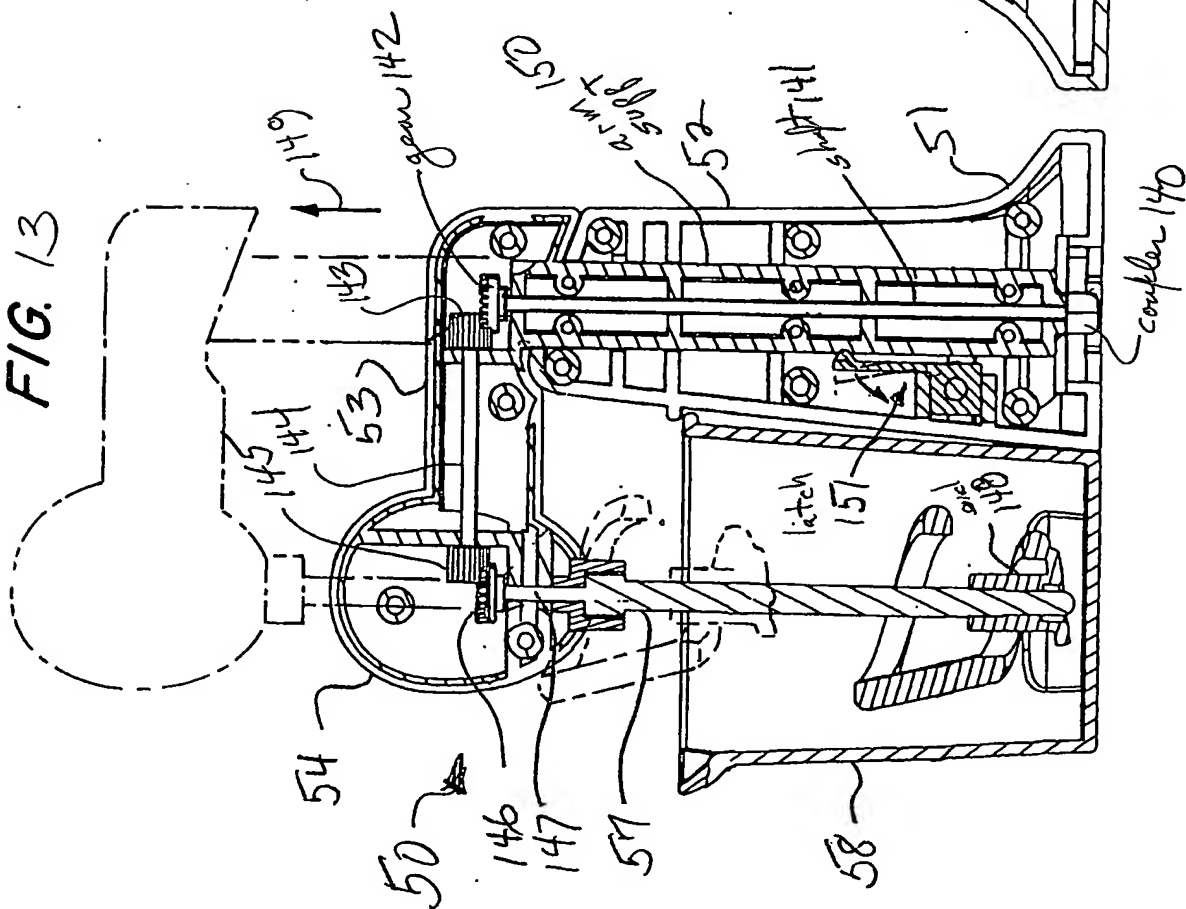


FIG. 14

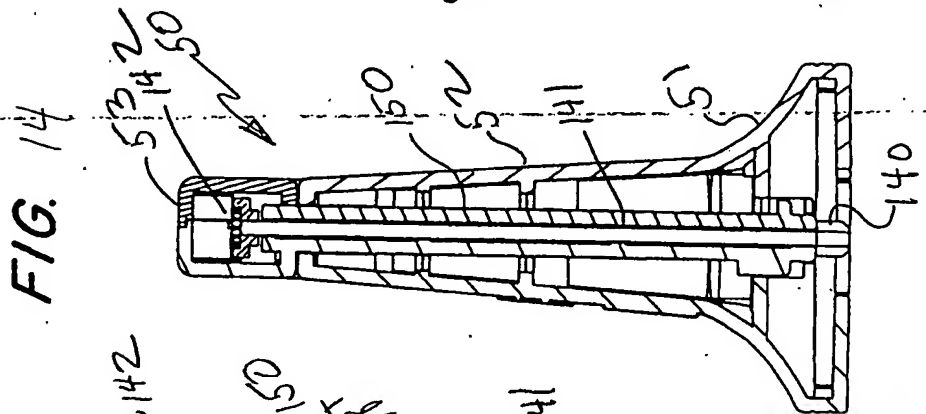
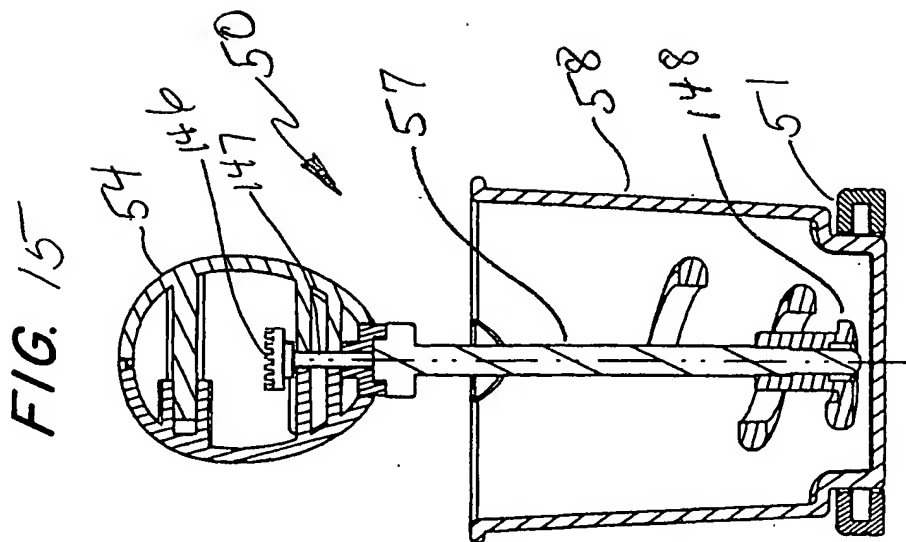


FIG. 15



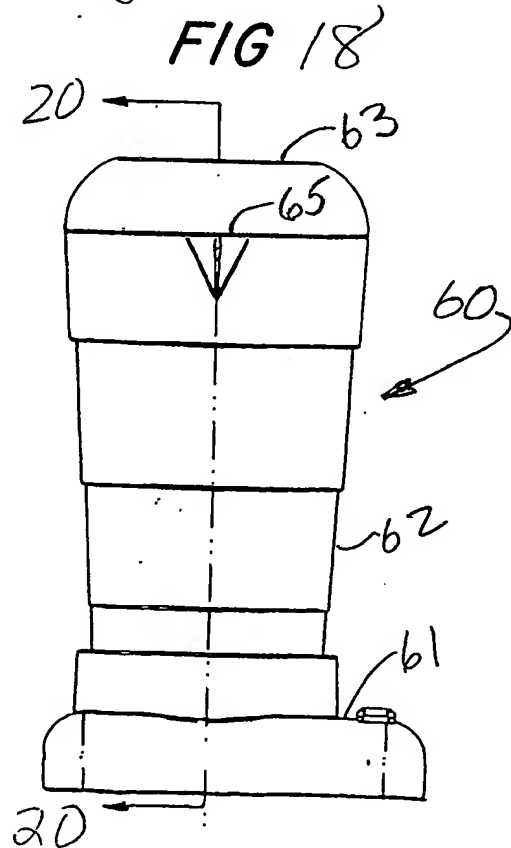
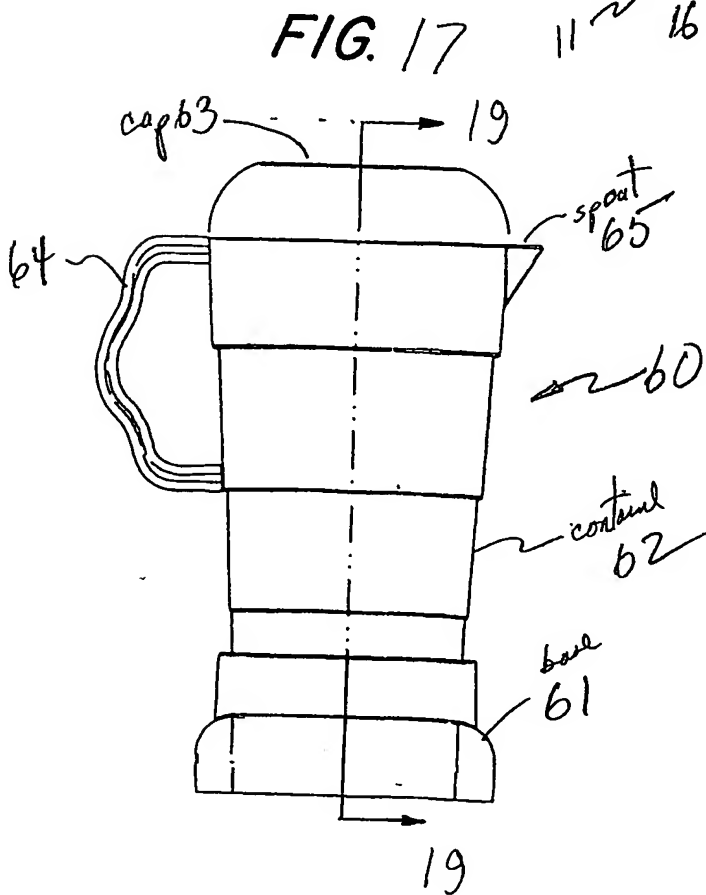
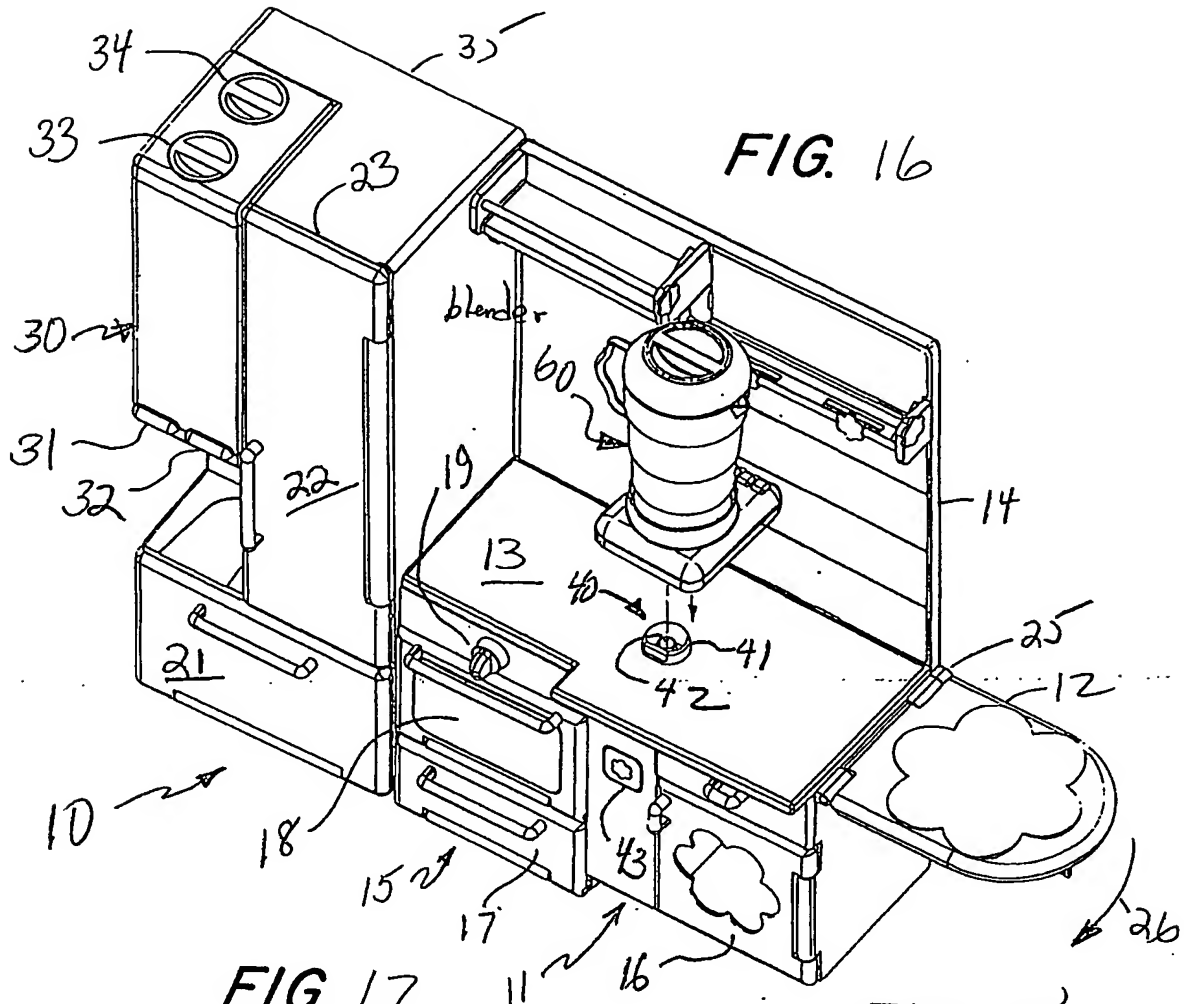


FIG. 20

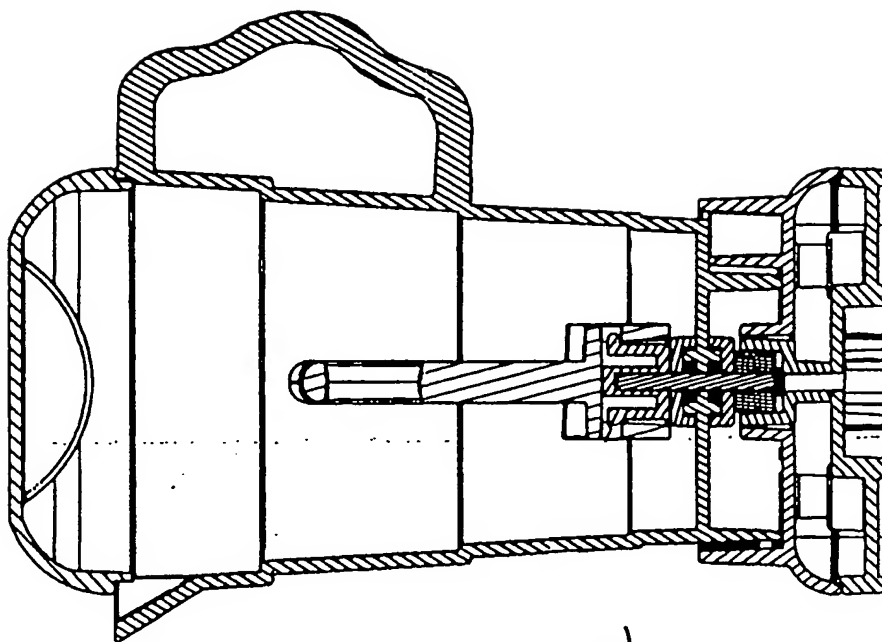
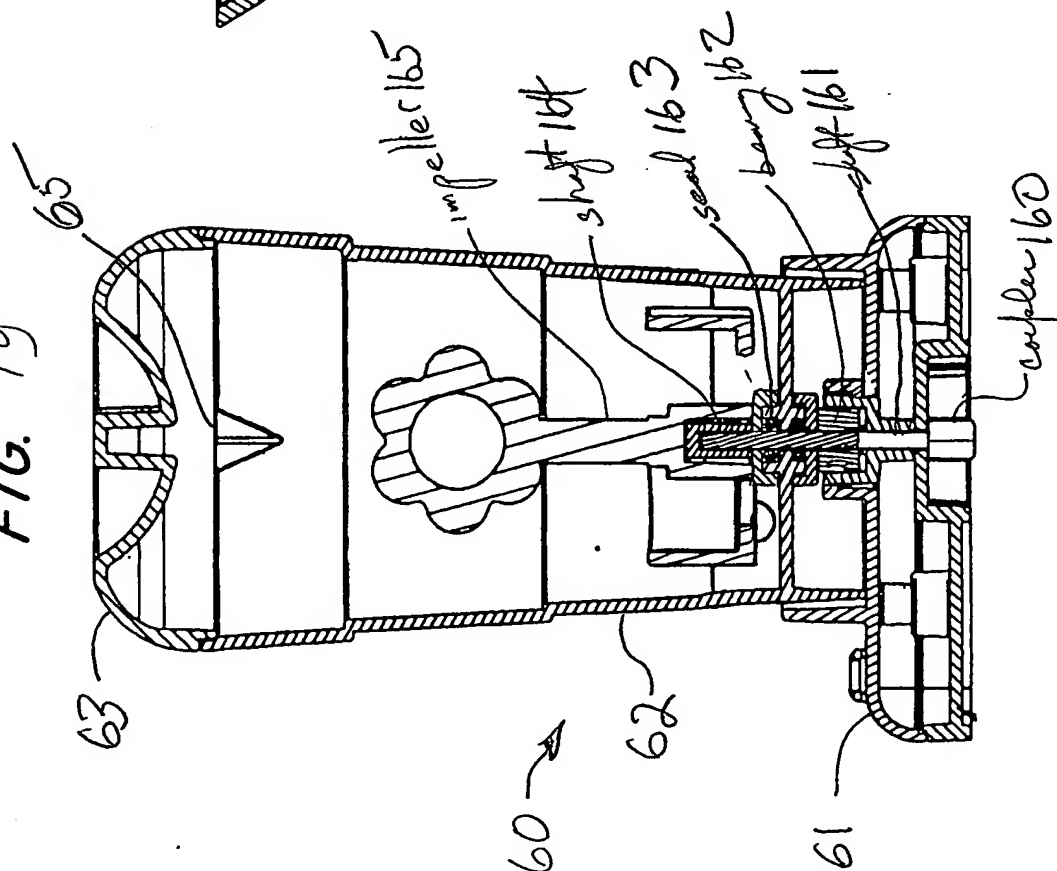
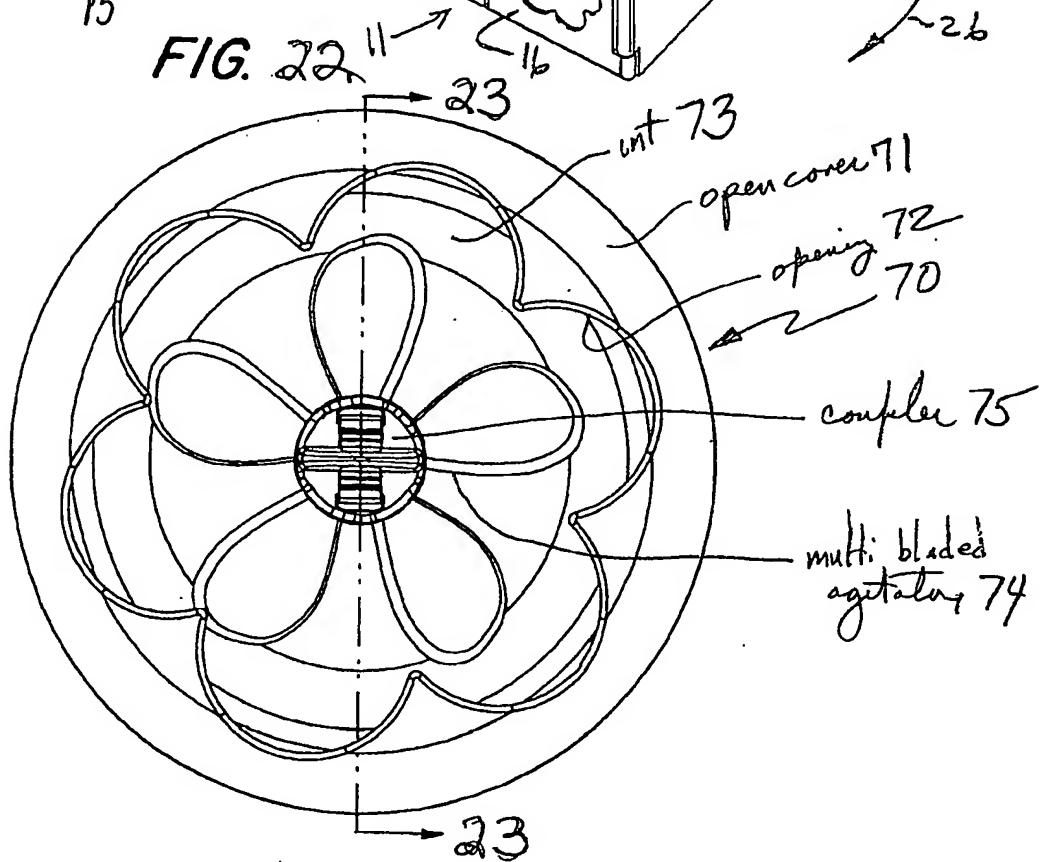
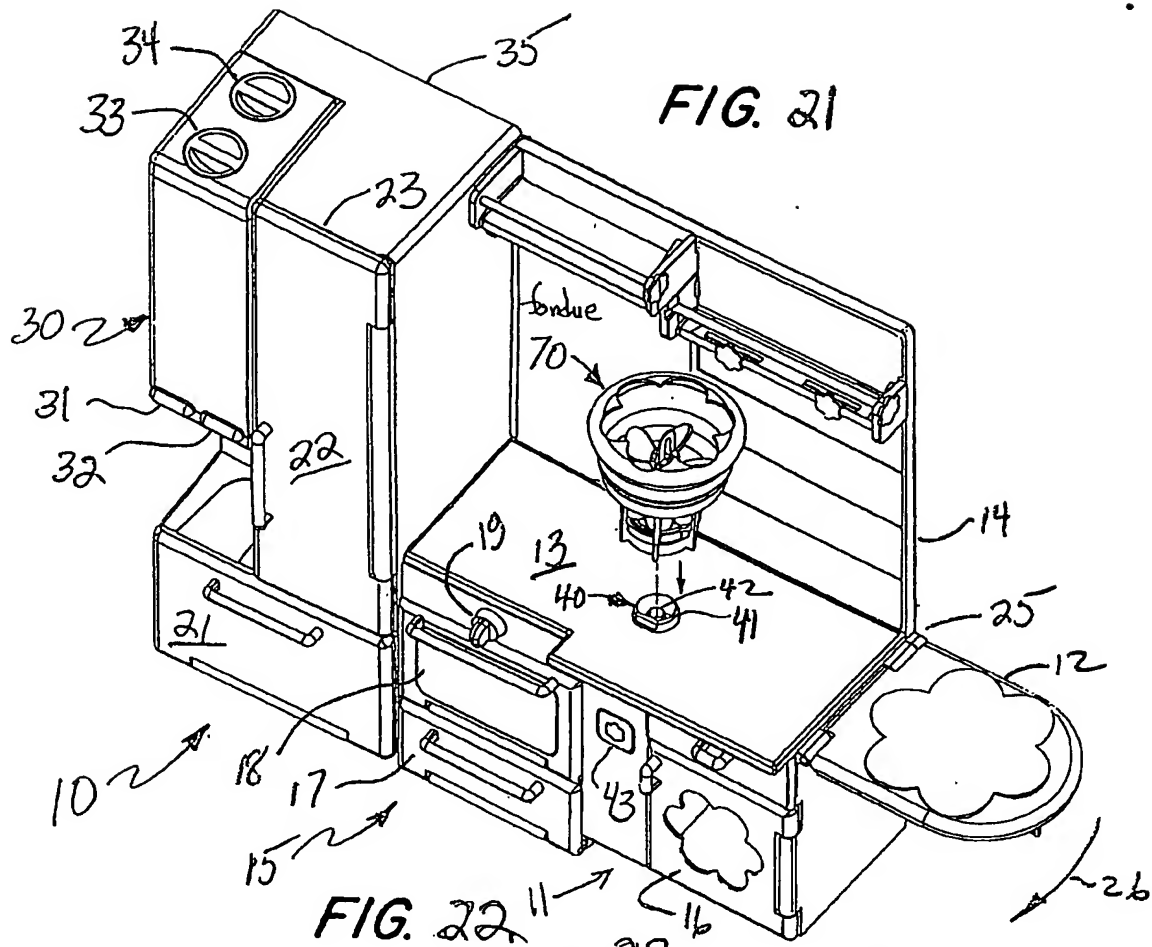
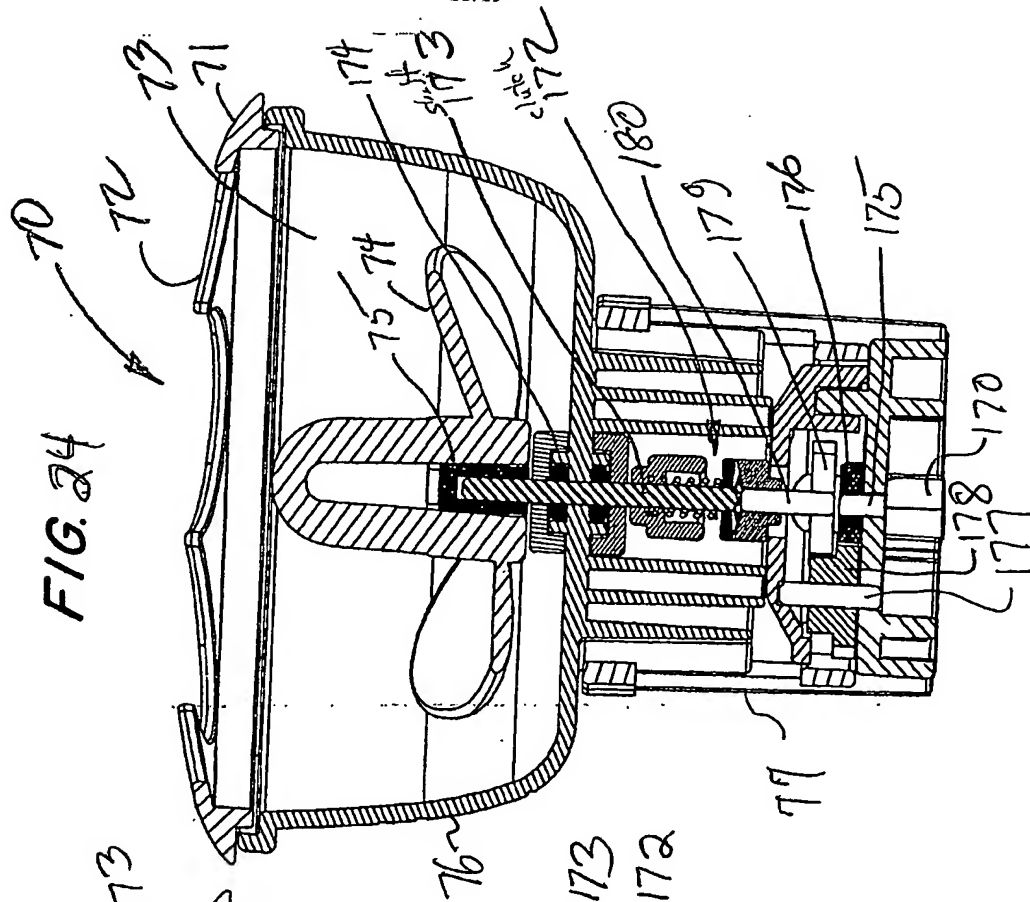
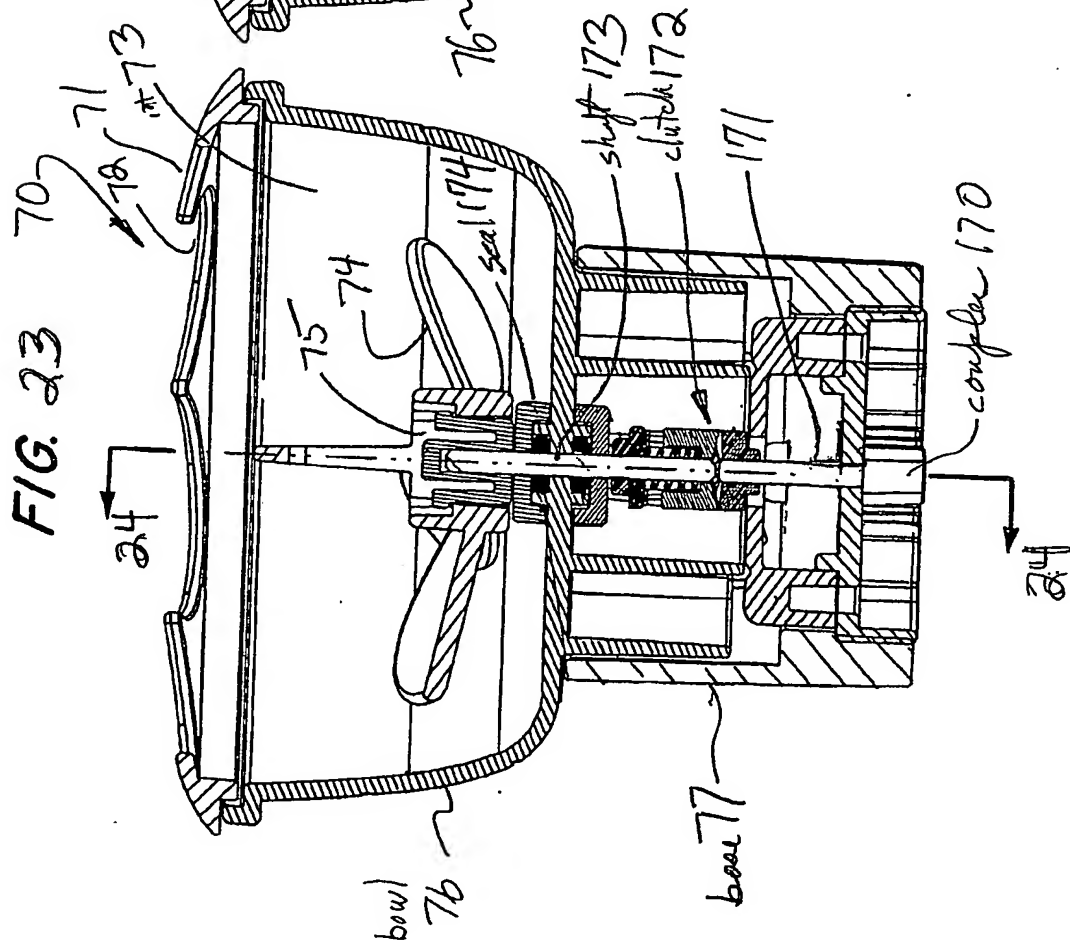


FIG. 19







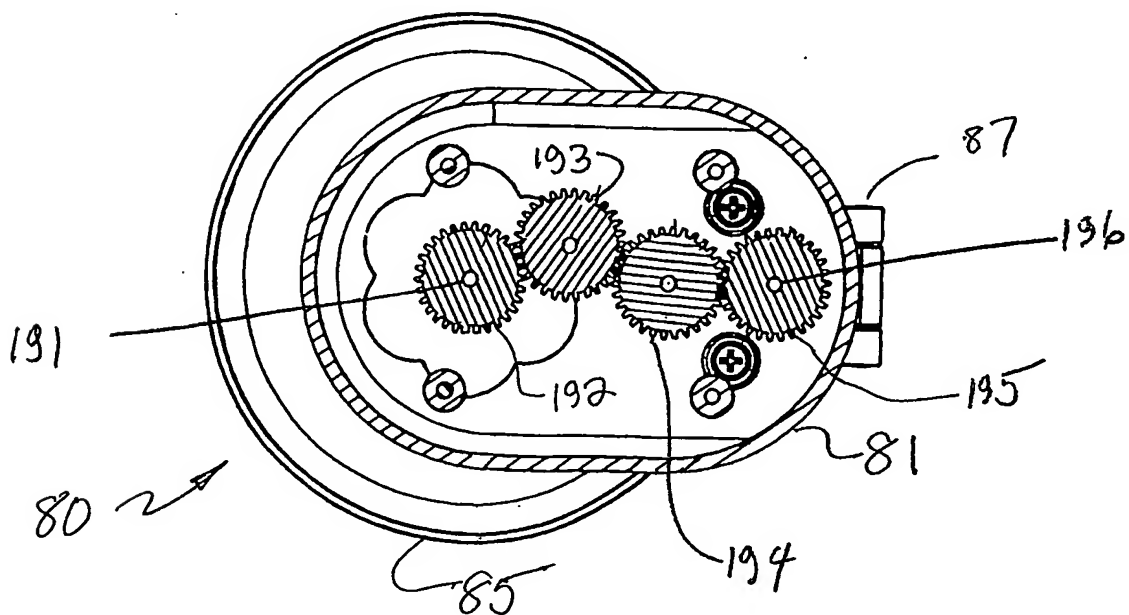
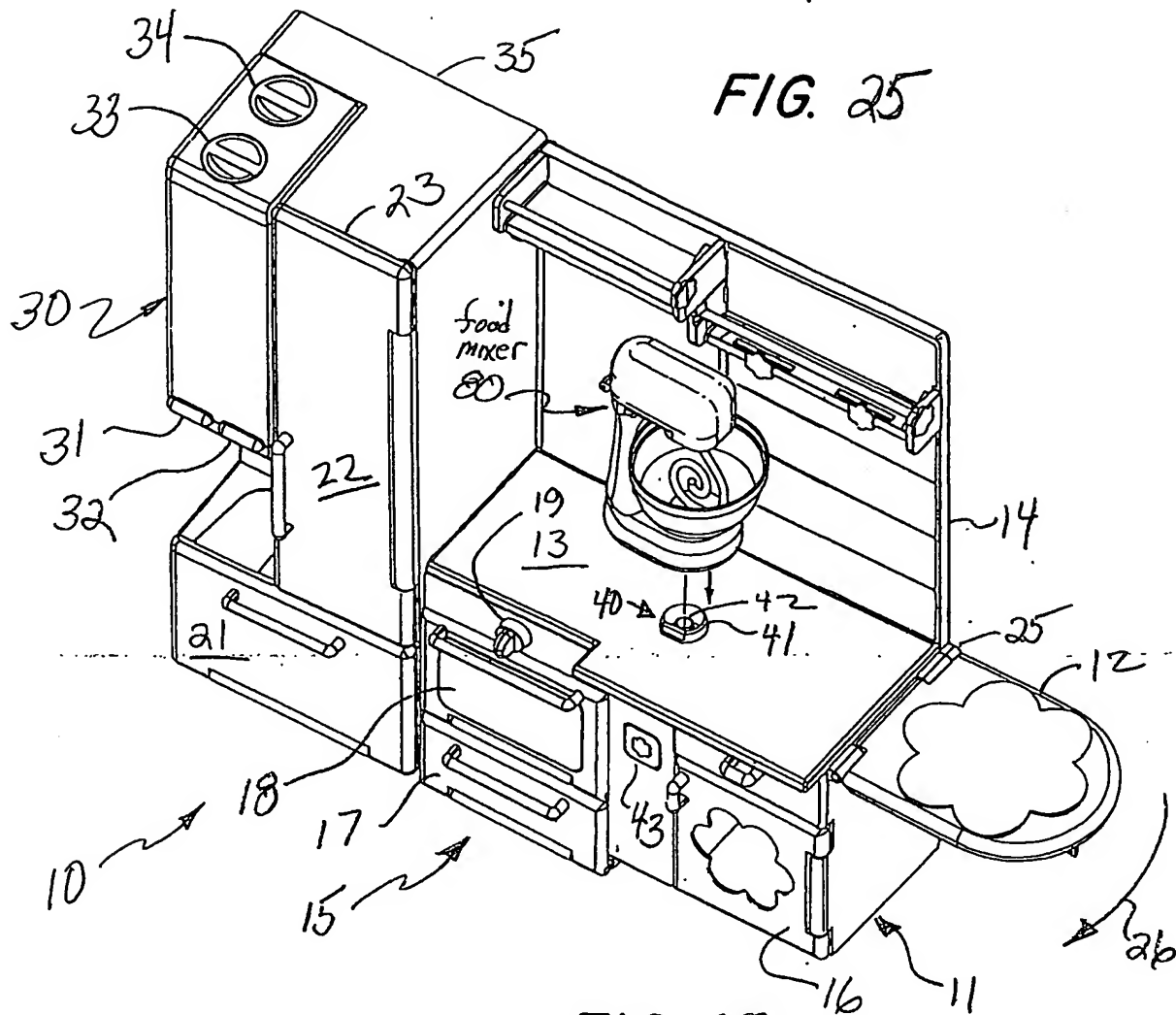


FIG. 31

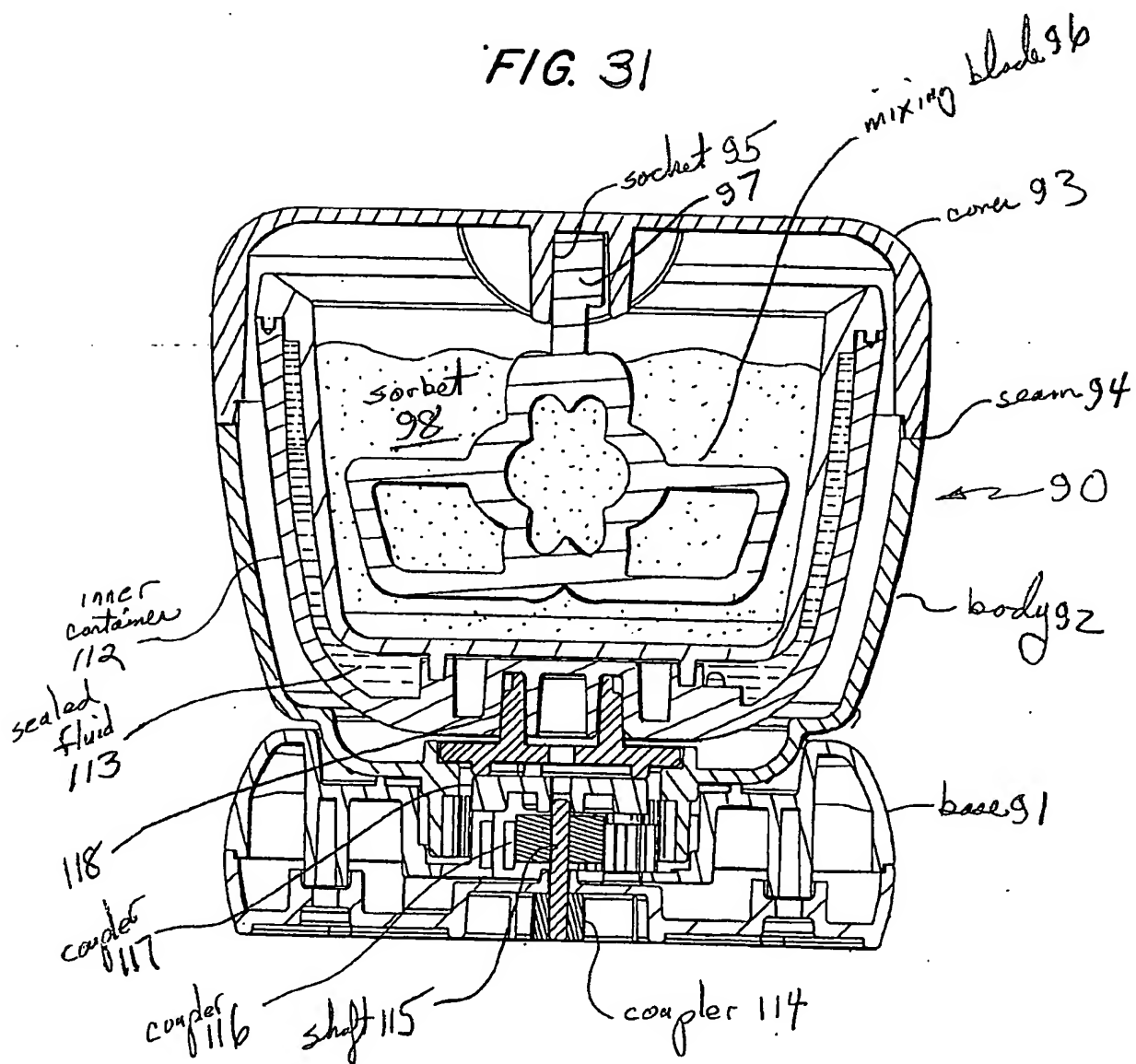
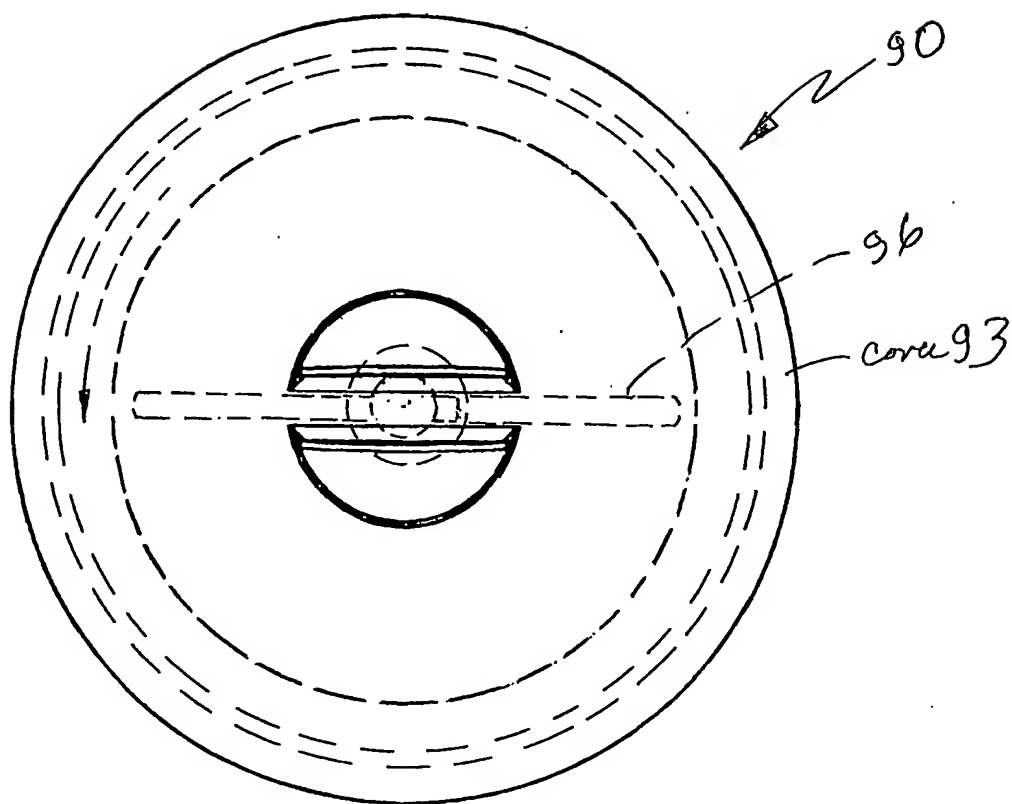


FIG. 32



B2696(GB582) FONDUE FUN EXPLODED VIEW

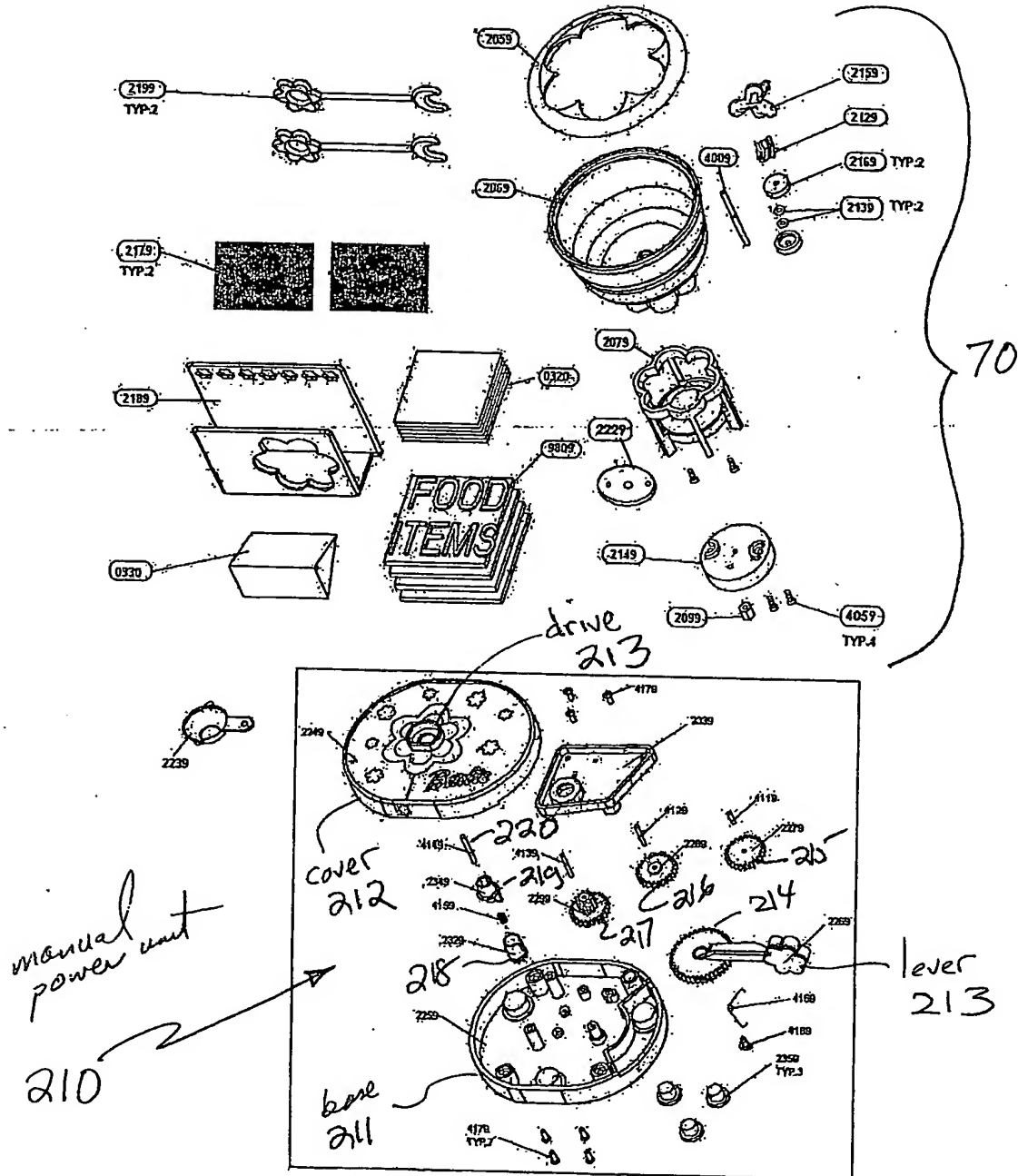
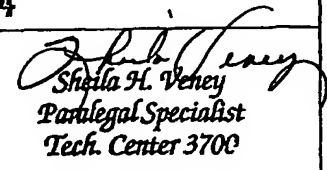


FIG 33

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/32333

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : A63H 33/30, 3/52, 17/44, 29/22, 33/26 US CL : 446/475, 479, 481, 482, 483, 484, 485 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 446/475, 479, 481, 482, 483, 484, 485 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3,774,338 A (WAAK) 27 November 1973 (27.11.1973), see abstract.	1
A	US 5,306,192 A (CAVEZA et al) 26 April 1994 (26.05.1994), see abstract.	1
A	US 4,322,909 A (HOLAHAN et al) 06 April 1982 (06.05.1982), see abstract.	1
A	US 6,439,957 B1 (MACCARTHY) 27 August 2002 (27.08.2002), see column 1 lines 23-55.	1
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents:		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O"	document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed	
Date of the actual completion of the international search 19 February 2004 (19.02.2004)		Date of mailing of the international search report 09 MAR 2004
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer Jamila Williams Telephone No. 703-305-3312  Sheila H. Venev Patent Legal Specialist Tech. Center 3700